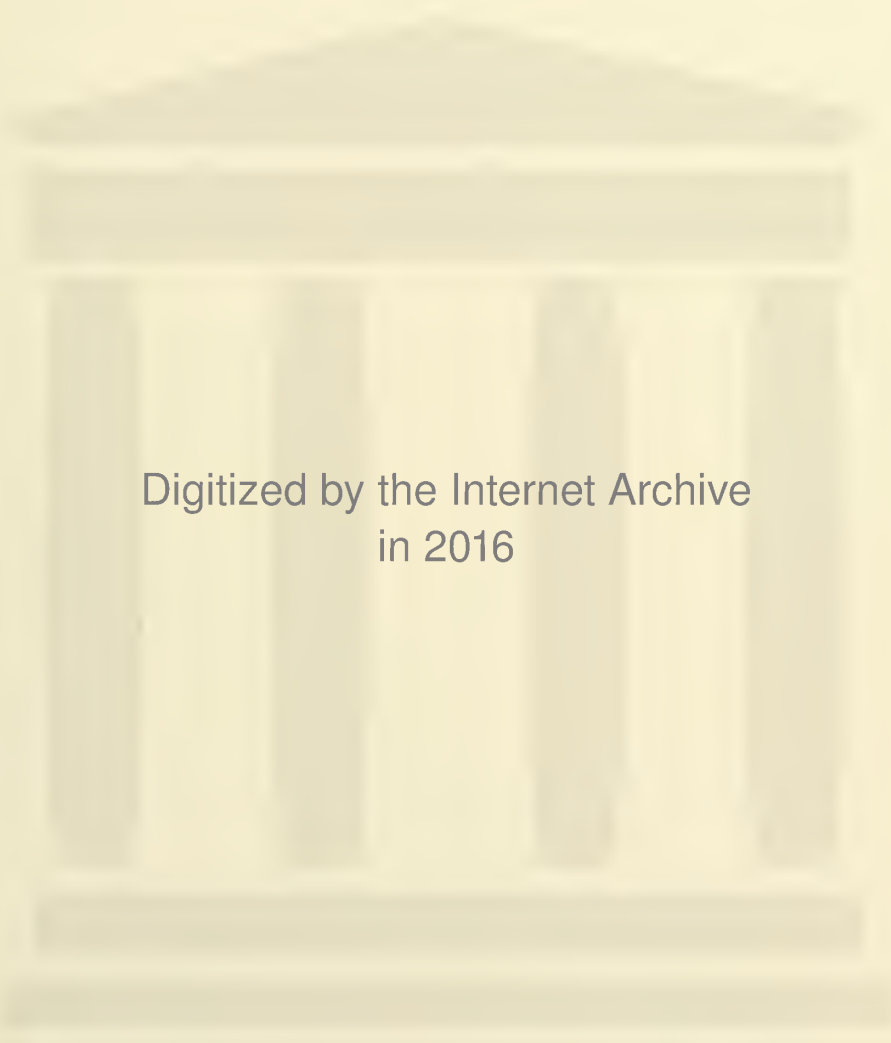


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GRANULOMA OF ILEOCECAL REGION NEED FOR STUDY OF FRESH SURGICAL SPECIMEN

A CASE REPORT

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A case of granuloma of the ileocecal region recently encountered by one of us (J. L. C.) has emphasized the need for study of the surgical specimen while it is fresh. It is customary in several of the hospitals in which we operate for the pathologist to delay for several hours the examination of the surgical specimen, and at times the specimen is placed in the fixing fluid before the pathologist examines it. The etiology of one of the granulomatous lesions of the bowel, i. e., ameboma, can be positively diagnosed only by finding the active ameba. The histopathology of several of the granulomata, including the ameboma, is not pathognomonic for any one of them and the complement fixation test for amebiasis is not sufficiently accurate to be relied upon clinically.

The incidence of amebiasis in the Southern States, and even in other sections of the country, is sufficiently great to make the etiologic diagnosis of granulomata an important problem in the practice of surgery.

The occurrence of amebiasis in the temperate climates was emphasized by the Chicago epidemic. The recent return of soldiers from tropical countries gives greater practical significance at this time to this problem. Massie¹ assumes from studies done even before World War II that one out of every five to twenty persons in the general population has amebiasis.

Many patients with chronic amebiasis and some with acute amebiasis are brought to the surgeon without any suspicion of the true etiology. The tendency to suspect amebiasis only when diarrhea, mucus and blood are reported in the stools is responsible for much error. Massie,¹ in a series of 52 cases, found that mucus in stools occurred in 23 per cent; bloody stools in 30.8 per cent; diarrhea in 48 per cent, while abdominal pain occurred in 94.2 per cent and flatulence in 57.7 per cent. Due to the predominance of cecal involvement in both acute and chronic amebiasis, the differential diagnosis between amebiasis and appendicitis is the one most frequently to be made. Ochsner and DeBakey² report the performance of routine preoperative stool examinations on patients with a diagnosis of chronic appendicitis.

Amebomata occur in the cecum and sigmoid most frequently and may easily be mistaken for carcinoma. Clinically and radiologically there is nothing distinctive to differentiate this from carcinoma or other lesions, according to Hawe.³ It appears likely that amebomata are sometimes classified by the surgeon, and the pathologist as well, as granulomata of other etiology, such as that designated as regional ileitis.

1. Massie, Francis M.: Amebiasis; Cause of Abdominal Pain, *South. Surgeon* 9:584-592 (August) 1940.

2. Ochsner, A., and DeBakey, M.: Surgical Amebiasis, *International Clinics* 1:68-99 (March) 1942.

3. Hawe, Phillip: Surgical Aspect of Surgical Amebiasis, *Surg., Gynec. & Obst.* 81:387-404 (Oct.) 1945.

The following case report emphasizes the necessity for immediate study of the fresh specimen:

Mr. W. C. F., white, male, age 35, clerk, first consulted one of us (J. L. C.) on July 15, 1946. His chief complaint was frequent stools, 4 to 6 daily. This frequency had been present for three weeks. No blood or mucus had been present in the movements. The movements were sometimes solid and sometimes watery. He knew no cause for the diarrhea. His bowels ordinarily had been regular. He had come from the South Pacific in June 1945. He reported a diarrhea for a few days at one time while he was in South America. He reported that he perspired freely at night and had had a hacking cough in the mornings for some time. He had lost 15 pounds in weight during the previous two months.

His appetite was not good.

There had been no nocturia and no other urinary tract symptoms.

He had not had a chronic cough and had expectorated no blood in the past.

There was no shortness of breath and no swelling of his feet. He slept well.

Past history included no serious illnesses and no operation, except tonsillectomy.

There was no family history of cancer, tuberculosis or diabetes. Venereal disease was denied.

Physical examination revealed a well developed and fairly well nourished white male, weighing 134 pounds and measuring 66 inches in height. Pulse was 126 per minute and temperature was 99.4°. Blood pressure was 138/84. Reflexes at knee and elbow were normal. Teeth were in fairly good condition. Tonsils were absent. There was no thyroid enlargement. There was no enlargement of the cervical or supraclavicular lymph nodes. The lungs were negative to inspection, palpation, percussion and auscultation. The heart was regular and rapid. No murmurs were heard and there was no enlargement. The abdomen revealed no masses or areas of unusual tenderness. Rectal examination revealed no hemorrhoids or other indications of pathology. The prostate was smooth and of rather soft consistency.

Laboratory reports were as follows: Hemoglobin 68 per cent (Haden-Hauser), total red cells 4,040,000, white blood cells 3,200, neutrophils 65, lymphocytes 35, mod-

erate anisocytosis and achromia. Urinalysis showed acid reaction, 1.024 specific gravity, no albumin, sugar or casts. An occasional leukocyte and 3 to 4 red cells per high power field in a centrifuged specimen were found. The Kahn test was negative. A warm stool examination a few days later revealed no amebae, flagellates or ova and doubtful occult blood.

Bismuth, an antispasmodic, and iron were given with some improvement. In September, a gastric analysis revealed free acid 48, and total acids 79. The basal metabolic rate at this time was plus 9 on two readings. His blood picture and his clinical findings at this time were about the same as at the first examination. He had gained 3½ pounds while continuing at work. He was not seen from early October until December 9, at which time he weighed 143 and had a pulse rate of 134 per minute. He reported stools occurred 2 to 3 times daily most of the time.

The blood count continued low and on December 27, 1946 an x-ray study of the colon was made by the roentgenologist, who reported as follows: "Barium enema: The opaque material entered and filled the rectum and colon without evidence of obstruction, until the ascending colon was reached. Slightly proximal to the hepatic flexure, in the ascending colon, an obstruction was encountered which prevented the filling of the ascending colon and cecum. There is a deep cup-like depression in the distal loop of the colon with a small amount of barium trickling through.

"The findings suggest a tumor, probably neoplasm, in the ascending colon at the hepatic flexure."

The patient was admitted to the hospital on December 28, 1946, and, after preparation with sulfasuxadine, was operated upon by one of us (J. L. C.) on January 3, 1947. A mass was found in the right lower quadrant of the abdomen. The remainder of the abdomen was explored and found free of disease except that a loop of sigmoid was found adherent to the mass in the right side. The mass was found to involve the cecum and a portion of the ascending colon and terminal 20 inches of the ileum. An end to side ileocolostomy was done between the distal normal portion of the ileum and the mid transverse colon. The intervening section of the ileum and colon was removed. This speci-

men was made up of about 25 inches of the terminal ileum, the cecum, ascending colon and a considerable portion of the right transverse colon.

The specimen was sent to the laboratory and as usual was not examined while in the fresh state. The pathologist's report, in part, was as follows:

"Specimen consists of a mass of small intestine and a segment of large intestine. The latter is approximately 17 cm. long. The small intestine is much longer and is coiled and twisted on itself. It is approximately 60 cm. long, diameter varies around 2.5 to 4 cm. The surface is irregularly reddened, particularly over the junctional area of the ileum and cecum. This portion is indurated and thickened and is continuous with a swelling of the mesentery about which the small intestine seems to be irregularly curled. When the bowel is opened there is seen in the cecum primarily at the base of the appendix an irregular thickening of the wall with scattered punched out ulcer-like areas that extend deep in sinus fashion and with interrupted polypoid foldings of the mucosa. The bowel wall reached a maximum thickness of 1.8 cm. This gradually tapers through a segment 7.5 cm. long where it ends rather abruptly. The swelling of the mucous membrane involves particularly the ileum through a segment 7.5 cm. long where again there is marked polypoid thickening interrupted by three punched out sinus like ulcers continuous with the mesentery and the mass mentioned above within it. The polypoid mucosal mass varies from a few mm. to 2.5 cm. in diameter. The bowel wall in the thick area is wet and shows a distinct puffiness.

"Smears from the sinus tracts show large masses of mucous and red cells containing inflammatory exudate of neutrophils and monocytes. There are frequent round or ovoid structures which suggest amoeba but none of these are definitely typical. Sections of the colon show a marked ulcerative sinus forming an inflammatory process in the mucosa. This extends varying depths into the wall and produces marked thickening of the wall. The mucous surface is often covered with exudate that is continuous into the sinus tracts which dissect varying depths into the wall. The exudate, superficially, is predominantly neutrophils but in the deep-

er portion plasma cells predominate. There are here and there scattered amoeba-like structures contained in the exudate superficially. There is a focal, intense and moderate diffuse lymphocytic filtration of the wall. With this there is an associated obliterative fibrosis of vessels and a marked fibrous thickening of the serous coat. The peritoneal surface is covered with serum and is infiltrated with neutrophils. The section of the ileum shows a similar inflammatory process producing ulcers along the mucosa and causing a marked thickening of the wall. There are again occasional amoeba-like structures and the mucosa produces abundant mucin.

"Diagnosis: Chronic ulcerative inflammation of the terminal ileum and cecum with sinus formation and chronic intestinal obstruction.

"Comment: The etiology of this lesion is not definitely established but from the physical appearance, together with the finding of amoeba-like masses in the exudate, it is believed amoebic enteritis is most probable."

In view of the pathologist's report it was decided to place the patient on amebicidal therapy and this therapy was supervised by the medical consultant. It consisted of emetine hydrochloride and Diodoquin.

The patient made an uneventful recovery. A second course of emetine was carried out in the office and Diodoquin was continued for a short time. Several warm stools have been examined for amoeba but none have been found.

An x-ray study by the roentgenologist on September 19, 1947 is reported as follows: "No residue in the stomach at six hours. Stomach when filled was normal in position, tone and peristalsis. No evidence of ulcer or malignancy. Frequent normal duodenal caps could be seen.

"Barium enema given: Entered and filled the colon without obstruction. The cecum and ascending colon were missing. The anastomosis between the remaining part of the colon and terminal ileum was well open and the barium mixture flowed freely through the small bowel revealing no evidence of tumor."

The patient, when seen in the office on December 19, 1947, weighed 145 pounds. Pulse rate was 114 per minute. His hemo-

globin was 91 per cent (Haden-Hauser) and total white cells were 8,000 with 62 per cent neutrophils. He reported still 1 to 4 stools daily. He feels well, eats well, and has no complaints. He has been at work for about nine months.

COMMENT

One hesitates to present a case where the diagnosis is admittedly uncertain but this experience should emphasize to the surgeon the importance of asking for a study of the fresh specimen in cases from which granulomatous or other doubtful lesions have been removed.

A review of the records of the Hillman Hospital, Birmingham, Alabama, for the fifteen years from 1933 to 1947, inclusive, and of the Jefferson Hospital, Birmingham,

from its opening, in 1941, until December 1947, reveals that a total of 27 cases have been discharged with the diagnosis of amebic dysentery. No deaths were reported from this disease in that period of time. None of these cases had surgical treatment for complications of the amebiasis. The question is raised in our minds as to whether cases diagnosed as having regional ileitis or some other granulomatous lesion might have revealed the amebae if a study of the fresh specimen had been made immediately after removal from the abdomen.

This case report is presented with the hope that it may stimulate the surgeon and pathologist to study immediately the fresh specimen in cases presenting lesions of the gastrointestinal tract in which the etiology is doubtful.

SPONTANEOUS PNEUMOTHORAX

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Etiology: Spontaneous pneumothorax is one of the mechanico-circulatory diseases of the pleura. The presence of air or other gas in the pleural cavity is known as pneumothorax. Normally, the pleural cavity is a vacuum with flexible boundaries. Pneumothorax may be spontaneous, traumatic or induced. Spontaneous pneumothorax may complicate any disease of the pulmonary tissue or other thoracic structures. It usually involves the entire pleural cavity but may be a localized pocket. Although pulmonary or pleural tuberculosis is admittedly a very common cause of spontaneous pneumothorax, many other pulmonary diseases such as emphysema (Fig. 1), asthma, bronchiectasis, lung abscess, septic infarction, pneumonia, cancer, subpleural blebs or cystic disease of the lungs are capable of producing this complication. Under certain conditions, air may also enter the pleural cavity from the esophagus, stomach or other portions of the intestinal tract which are in close relationship to the infradiaphragmatic surface. Mediastinal emphysema frequently has an associated pneumothorax. Empyema may produce pneumothorax either by destruction of the underlying pulmonary tissue and subse-

quent bronchial communication, or it may result from the metabolic activity of gas-producing bacteria present in the purulent fluid. Fortunately, production of a pyopneu-

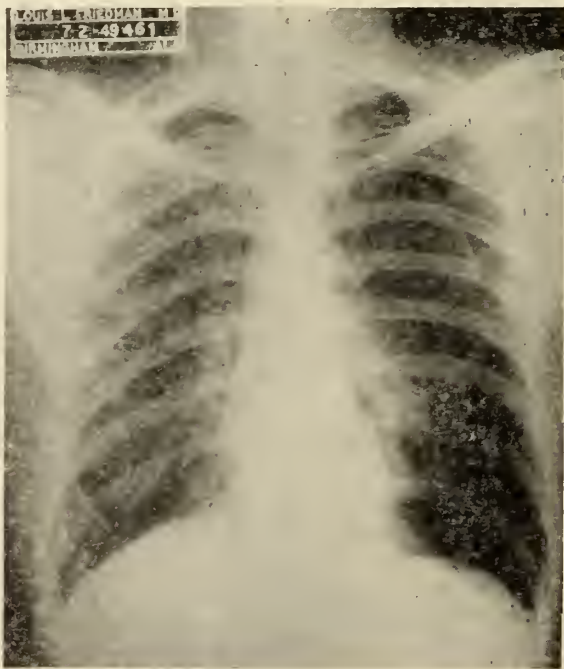


Fig. 1. Recurrent simple ("idiopathic") spontaneous pneumothorax occurred twice on the right side and six times on the left. Notice mediastinal deviation and small amount of fluid in left pleural cavity.

Part of a presentation delivered at the Interim Meeting of the American Medical Association, Washington, D. C., December 8, 1949.

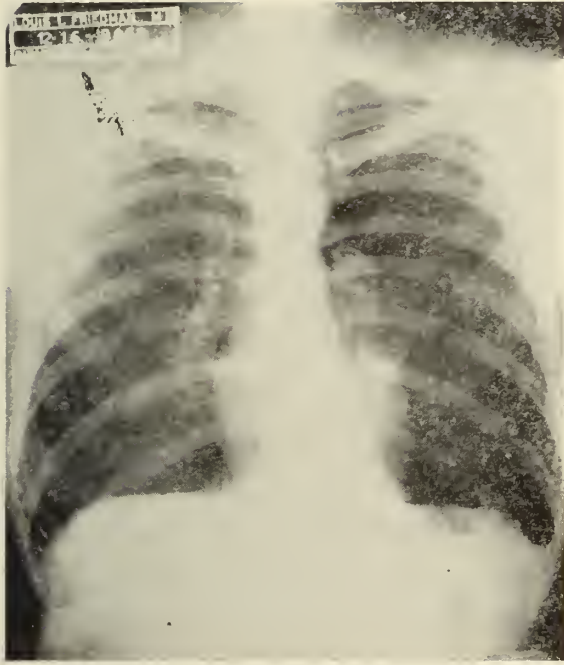


Fig. 2. Spontaneous pneumothorax in case of emphysema complicating anthracosilicosis.

mothorax due to empyema is rather infrequent. As it often happens, however, the reason for the development of a spontaneous pneumothorax cannot be assigned to a definite cause (Fig. 2). Consequently, there is a relatively large group of spontaneous pneumothoraces which are classified as simple or "idiopathic." Purposefully-induced pneumothoraces are usually established for diagnostic or therapeutic purposes. This presentation is not concerned with diagnostic, therapeutic, tuberculous or traumatic pneumothorax. The remarks in this discussion are, therefore, limited to spontaneous pneumothoraces resulting from non-tuberculous diseases.

Pathology and Pathogenesis: Of all the various clinical entities which may be responsible for spontaneous pneumothorax the simple or idiopathic variety has attracted the greatest attention and speculation. Many explanations have been proposed but none is universally acceptable. Rupture of a subpleural bleb, however, is the most acceptable popular explanation today. Only on rare occasion can the subpleural bleb be demonstrated while the patient is alive. Postmortem examination of the pleura of patients who experienced "idiopathic" spontaneous pneumothoraces in life is almost as

discouraging. No evidence of pleural tear can be demonstrated in the overwhelming majority of cases, and the pleura usually appears perfectly normal, macroscopically and microscopically. In the past it has been customary to assign all unexplained spontaneous pneumothoraces to a tuberculous etiology, but in recent years evidence has accumulated to discredit this tendency. Many cases of spontaneous pneumothorax have been carefully studied and followed. The incidence of subsequent tuberculous infection in these instances has been very small. Reliable investigators have concluded that it is only slightly greater than the expected incidence of tuberculosis in the general population.

Simple spontaneous pneumothorax is most frequent during the more active years of life. It occurs in otherwise normal individuals. Men are more frequently affected than women. Spontaneous pneumothorax is usually unilateral but may be bilateral, especially if the two pleural cavities communicate as they do in some instances. Not uncommonly, a patient may experience recurrent episodes of simple spontaneous pneumothorax (Fig. 1). The author recalls one of his medical students who experienced at least eight known attacks in four years. Although a familial tendency has not been established, numerous instances of simple spontaneous pneumothorax occurring in several members of the same family have been observed. Simple spontaneous pneumothorax may occur during periods of absolute rest but is more frequently associated with some form of physical exertion such as sneezing, coughing, laughing, yawning or straining at stool. The signs, symptoms and treatment of the condition depend entirely on the extent of the pneumothorax and degree of positive pressure changes in the pleural cavity.

Pathologic Physiology: Depending on the nature of the pleural defect, three types of spontaneous pneumothorax are recognized: the closed, the open, and the valvular or tension pneumothorax. Gas analysis of the contents of the pleural cavity will differentiate the closed type of the pneumothorax from the other two varieties. In the closed type the oxygen content of the pleural gas ranges up to 5 per cent. A higher content indicates communication with the

outside air. This method of determining the type of pneumothorax is too involved. Rapid determination of the type of existing pneumothorax may be established by obtaining manometric readings of the intrapleural pressure. This method is reliable and preferable to that of gas analysis. The trend of events in the pleural cavity is reflected accurately in a serial study of manometric pressure determinations. In the closed variety the pressure in the pleural cavity experiences only a moderate alteration. The manometric readings do not exceed 0 mm. Hg. The extent of the pneumothorax is variable, but symptoms are either absent or so minimal that the condition is unquestionably frequently overlooked. The pressure in the normal pleural cavity with usual respiratory effort is always negative or sub-atmospheric. This negative pressure represents the differential between the elastic recoil of the pulmonary tissue and the less yielding thoracic wall. It varies from -6 mm. Hg. during inspiration to -2.5 mm. Hg. during expiration. Unusual or forced respiratory efforts may produce wider ranges of intrapleural pressures. In the open type of pneumothorax, atmospheric pressure prevails in the pleural cavity because the communication with the bronchial tree is constant. Symptoms in this instance are usually more severe than in the closed type. The open type of pneumothorax may persist for longer periods of time before the opening in the pleura closes and the air is reabsorbed. Finally, in the tension type of pneumothorax, the valve-like arrangement of the defect in the pleura permits air to enter the pleural cavity but none can escape. At first, air enters the pleural cavity with each inspiratory effort. As the intrapleural pressure becomes more positive and the amount of air in the pleural cavity increases, however, the hemithorax is immobilized. Consequently, the lung on the same side becomes atelectatic and useless. When this circumstance develops, air no longer enters the pleural cavity during inspiration but only passively during the expiratory effort of the contralateral side. If the mediastinum is mobile, spontaneous pneumothorax of one hemithorax always exerts a deleterious compressing effect on the contralateral lung. Pulmonary function and vital capacity are further impaired in this manner. The re-

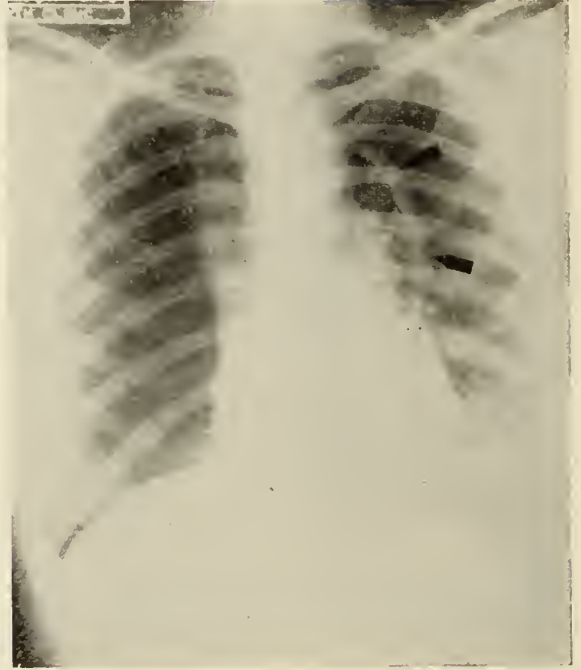


Fig. 3. Mediastinal herniation.

sulting clinical signs and symptoms may assume alarming proportions. Mediastinal herniation due to pneumothorax is not uncommon (Fig. 3). This complication can be best demonstrated by fluoroscopic examination of the chest in various phases of respiration. It is indeed fortunate that most spontaneous pneumothoraces, even if open or valve-like to begin with, are soon converted to the closed variety. In the absence of this fortuitous chain of events, spontaneous pneumothorax would present a more formidable therapeutic problem and terminate fatally with greater frequency.

Spontaneous pneumothorax may complicate or be complicated by the presence of fluid in the pleural cavity. The pneumothorax is then identified by the proper descriptive prefix as hydropneumothorax (Fig. 4), hemopneumothorax, chylopneumothorax, serofibrinous pneumothorax and pyopneumothorax (Fig. 5). There is a widespread tendency to use the term hydropneumothorax to specify a pneumothorax with a serofibrinous effusion. This erroneous, confusing practice should be avoided. Clinically detectable fluid in the pleural cavity is generally present in all spontaneous pneumothoraces. The quantity varies greatly from insignificant amounts to effusions of signi-



Fig. 4. Hydropneumothorax, complicating congestive heart failure.

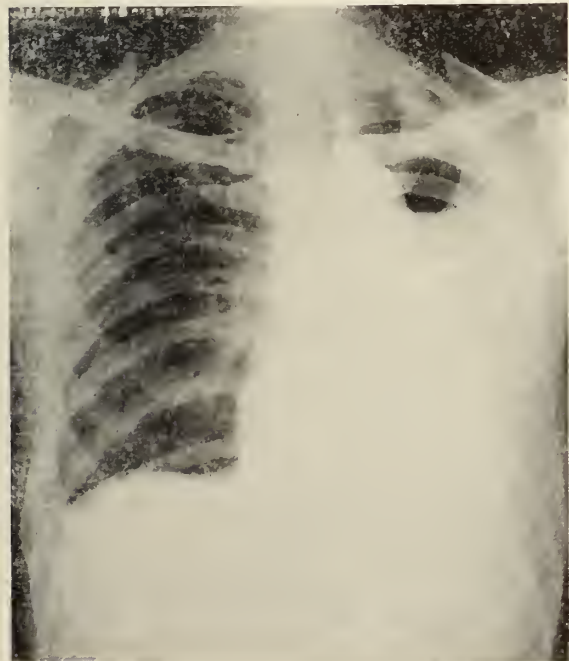


Fig. 5. Pyopneumothorax.

ificant proportions. Hydropneumothorax may develop very rapidly and give rise to severe symptoms. The author once observed the development of a severe hydropneumothorax in a matter of hours. It filled the en-

tire pleural cavity and caused sufficient pressure to produce an obstruction to the venous return from the head, neck and upper extremities.

Signs and Symptoms: The signs and symptoms of spontaneous pneumothorax vary with the type and degree of pneumothorax produced. The clinical picture is likewise influenced by the condition of the underlying lung, the mobility of the mediastinum, and the amount of cardiac reserve. Additionally, the condition of the pleura has a profound influence on the nature and course of the clinical manifestations. As previously stated, spontaneous pneumothorax may be associated with very few, or no, observable signs or symptoms. These cases are usually discovered accidentally during routine roentgenographic or fluoroscopic examination of the chest. The majority of recognized cases, however, manifest significant although varying signs and symptoms.

The average case of spontaneous pneumothorax is ushered in by a severe pain in the corresponding hemithorax. It may develop during a period of comparative physical inactivity or mild physical exertion. From the very beginning a state of shock may prevail. In this event, the patient appears apprehensive and dyspneic. The pulse is weak and rapid, and the blood pressure may fall precipitously. Pallor or cyanosis is evident, and the cold clammy skin is covered with sweat. This description applies to a relatively severe case. In milder cases the dyspnea and pain are correspondingly diminished. A tight or full feeling in the chest may be the dominant symptom. Elevation of temperature is comparatively rare; when it does occur, it is transient. Cough, if present, is usually non-productive. Aside from these observations, the hemithorax affected by the pneumothorax appears full and immobile. The intercostal depressions are eliminated. Instead, the interspaces are usually bulging and widened. The cardiac impulse, if distinguishable, is displaced to the contralateral side. On palpation the findings of inspection are verified, and vocal fremitus is either markedly diminished or absent. In cases of open pneumothorax, fremitus may be increased. Usually, the percussion note is hyperresonant or tympanitic but it may be dull. If a significant amount of fluid is pres-

ent in the pleural cavity, the percussion note at the base of the lung is typically dull. Percussion will also verify the immobility and depressed state of the diaphragm on the affected side. On auscultation, the breath sounds are markedly diminished, or absent, over the affected hemithorax and exaggerated on the contralateral side. A peculiar metallic tinkling sound may be elicited at the end of inspiration. The breath sounds, however, may have an amphoric quality. Voice sounds are usually distant. If a bronchopleural fistula exists in association with the pneumothorax, a gurgling sound may be heard. The demonstration of "Hippocratic succussion" or the "coin sound," respectively, is pathognomonic of pneumothorax with and without fluid. The physical findings in cases of pneumothorax are also influenced by the condition of the underlying lung and the presence of varying amounts of effusion in the pleural cavity.

Diagnosis: With few exceptions the physical findings in a case of good-sized pneumothorax are definitive and diagnostic. Small pneumothoraces and localized collections of gas in the pleural cavity, however, are overlooked frequently on routine physical examination. The diagnosis in these instances usually follows fluoroscopic or roentgen-ray examination of the chest. Fluoroscopic examination of the chest in all cases of pneumothorax is imperative since it affords an opportunity for direct observation and study of the prevailing dynamic intrathoracic mechanics. Additionally, the result of fluoroscopic evaluation may be used as a therapeutic guide. In left-sided pneumothorax a peculiar hammer-like action of the heart is frequently observed.

Obstructive emphysema, large gastric cysts of the thorax, large pulmonary cysts and cavities with or without fluid levels, bullous emphysema or a distended stomach projecting into the thorax through a diaphragmatic hernia may be confused with a localized or generalized pneumothorax. The correct diagnosis in all of these instances can be established by intelligent utilization of fluoroscopic or roentgenographic examination of the chest. To establish the correct diagnosis in more difficult cases, valuable assistance may be obtained from the use of indicated diagnostic studies. For example, a diagnostic pneumothorax will quickly dif-

ferentiate a gastric or pulmonary cyst from a pneumothorax. In cases of diaphragmatic hernia, a barium swallow will establish the abnormal presence of the stomach in the thorax. As a rule, the diagnosis of pneumothorax is quite simple.

Treatment: The treatment of spontaneous pneumothorax depends entirely upon its type and extent. Closed pneumothoraces usually require only symptomatic care. The amount of time required for the resorption of the gas depends upon the size of the pneumothorax and the condition of the pleura. Usually, even the larger ones disappear within one month, and with the smaller ones it is only a matter of days. Indicated analgesics and sedatives of choice may be used, respectively, for the control of pain and apprehension. Occasionally, the use of oxygen is warranted. Aspiration of some of the pleural gas is rarely necessary. Follow-up examinations at regular, frequent intervals are indicated to rule out serious responsible primary disease. If simple spontaneous pneumothorax recurs frequently, it may be advisable to establish pleural symphysis. To accomplish this objective the introduction of various irritants into the pleural cavity has been recommended. In this connection the use of the patient's own blood, 50 per cent dextrose solution, the insufflation of various powdered substances, such as ordinary talc, and a therapeutic trial with other materials have been advocated. In the author's hands the results obtained have been very equivocal. Since the resulting aseptic pleuritis may be quite troublesome, this form of therapy should be reserved for the more serious types of pneumothoraces. The best treatment for the mild closed type is bed rest and symptomatic therapy.

Treatment of the open type of pneumothorax is generally similar to that of the closed variety. Paralysis of the hemidiaphragm on the affected side may be beneficial. Tension pneumothoraces require immediate heroic therapy. The use of a water-trap is indicated in all these cases. To obtain the maximum benefit without delay, a 13-gauge needle should be used in the thorax. It should be introduced only far enough to permit the escape of the gas trapped in the pleural cavity. If it projects too far into the endothorax, additional tears in the pleura may result from coughing or any other ac-

tivity which brings the visceral pleura closer to the thoracic wall. The glass outlet tube should project no more than one centimeter below the level of the water in order to obtain satisfactory results. When bubbling ceases, the rubber tubing may be occluded temporarily with a suitable clamp. After a satisfactory period of observation, if the patient manifests no further signs or symptoms of increasing pressure in the pleural cavity, the water-trap may be disconnected. Before removing the needle from the chest, it is advisable to obtain a manometric reading of the intrapleural pressure. Since tension pneumothorax represents a real medical emergency, no time should be lost in reducing the intrapleural pressure. Sterile technique is desirable in accomplishing this result, but on occasion there is no time for sterilizing the skin or for the production of a satisfactory local anesthesia. The introduction of the needle into the chest without delay is the paramount objective in the event of tension pneumothorax. When pneumothorax and pleural effusions are co-existent, therapeutic considerations are influenced chiefly by the nature of the fluid involved. If medical measures fail in the management of spontaneous pneumothorax, surgical intervention may be indicated.

Discussion: It is frequently impossible to determine the specific etiology of spontaneous pneumothorax. Until recent years, in the absence of a proved etiology, simple or "idiopathic" spontaneous pneumothorax has been generally considered a complication or manifestation of pleural or pulmonary tuberculosis. However, there is now ample evidence that the incidence of demonstrable subsequent tuberculous infections in well-followed cases of simple spontaneous pneumothorax is about the same or only slightly higher than one would expect in other comparable population samples. In the absence of a proved etiology in spontaneous pneumothorax, therefore, one is not justified in routinely ascribing it to a tuberculous origin. This practice predisposes to mental anguish and anxiety for the patient. The mental invalidism which commonly results is very difficult to overcome. On the contrary, after all the available and indicated diagnostic studies have failed to establish a specific etiology, the physician is justified in emphasizing the relatively benign nature

and favorable prognosis in simple spontaneous pneumothorax. Nevertheless, frequent roentgenograms of the chest and other indicated studies should be included in the subsequent follow-up of the patient. This practice will afford constant reassurance for the patient and facilitate the rapid detection of any significant change in the lungs or pleura.

Comprehension of ordinarily normal intrathoracic mechanics and the ability to evaluate the pathologic physiology of spontaneous pneumothorax simplify the management of each case. All physicians should become familiar with and capable of implementing the treatment of spontaneous pneumothorax which may require immediate decompression. The privilege to alter dramatically the alarming chain of events in tension pneumothoraces is not reserved for the chest specialist.

SUMMARY

1. The problem of simple "idiopathic" spontaneous pneumothorax has been discussed in its various details.
2. The predominantly non-tuberculous origin of simple spontaneous pneumothorax has been emphasized.
3. Available evidence indicates that a ruptured subpleural bleb is probably responsible for the bulk, if not all, of the cases of non-tuberculous spontaneous pneumothorax.
4. Methods of recognizing and treating spontaneous pneumothorax have been enumerated.

The necessity for mass x-ray study of the population, such as the one just completed in metropolitan Boston, is demonstrated by the fact that only a fourth of all new cases are traceable to known cases of tuberculosis. This finding indicates the existence of a large unrecognized reservoir of bacilli, which is a possible source of infection to many susceptible persons. Only by the extension of case finding by mass x-ray examinations of large population groups can people suffering from incipient tuberculosis be assured of a reasonable chance for arresting the disease and returning to their homes as self-sustaining, independent citizens. These community surveys are especially important in that they reveal cases in this early, hopeful phase of the disease; 60 to 70 per cent are minimal, compared with a 10 to 15 per cent minimal stage reported by other methods of case finding.—*Editorial, New England J. Med., April 20, 1950.*

THE JEFFERSON-HILLMAN HOSPITAL

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and

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The purpose of this article is to relate the history of the Jefferson-Hillman Hospital, to describe its operations, to outline policies with respect to admission of patients, to point out its financial difficulties, and to emphasize its great value as an educational institution. This information is prepared for the doctors of Alabama to keep them informed as to the policies and operation of the institution.

For well over a half century the Hillman Hospital has been Jefferson County's outstanding institution for the care of indigent patients. Practically since its founding it has been supported by the county and operated as a unit of county government. Before the University of Alabama moved its medical school to Birmingham, the institution was operated solely for indigent patients and its entire budget was expended under the direction of the Jefferson County Commission. At one time its bed capacity was well over 400 patients, with about equal distribution of white and colored.

On the same block with the Hillman Hospital and standing wall to wall is the enormous, newly constructed Jefferson Hospital. This institution also was formerly operated under ownership of Jefferson County. It was one of the largest hospitals in America constructed prior to the recent war. It was finished in 1940 and was built entirely with Federal funds on ground that was owned by Jefferson County. The Jefferson Hospital was built at an approximate cost of \$2,600,000, with a 55 per cent outright Federal grant and a 45 per cent loan incurred by Jefferson County on assumption of its ownership. This loan was paid by the state of Alabama during the administration of Governor Sparks after the University of Alabama had assumed title to the property.

At the time of its acquisition by the University of Alabama, Jefferson Hospital was utilized entirely for the care of paying patients and housed some 250 such patients at

that time. Thus, Jefferson County found itself in the unique position of owning and operating an all-indigent hospital, the Hillman, and a brand new 500-bed institution, the Jefferson, which was occupied entirely by private patients. The institutions were located on the same block, stood wall to wall, and were operated by separate groups of personnel. In addition, Jefferson County owned a relatively new, five-story, outpatient clinic building and a much older seven-story nurses' home. All of these properties were deeded to the University of Alabama on July 11, 1945, after prolonged negotiations in which it was agreed that the county would go out of the hospital business and turn over its physical plant to the University for its use as a teaching institution for its College of Medicine. The agreement further provided that in the future Jefferson County would hospitalize its indigent patients in the University-owned hospital at a per diem rate, the rate to be established and renewed from year to year by mutual agreement between the University and Jefferson County, and that, in the event the two parties were unable to reach a decision on the rate, it would then be subjected to a board of arbitration. In the four years that this contract has been in effect, the University and county have been able to effect an agreement without resorting to arbitration every year but one. The per diem rates during the past four years have been as follows:

1945	\$4.00 per day (approximate).
1946	\$4.00 per day (approximate).
1947	\$6.00 per day.
1948	\$8.80 per day.
1949	\$9.50 per day.

Thus, during 1945 and also during 1946 the county paid to the University a flat sum of \$30,000 per month. In 1947 the per diem rate was established at \$6.00 per day; in 1948, \$8.80; and in 1949, \$9.50. Therefore, in these five years the county has paid the following gross sums to the University for care of the indigent sick:

†Dr. Kracke died June 27, 1950.

1945	\$360,000.
1946	\$360,000.
1947	\$495,000.
1948	\$584,000.
1949	\$684,000 (approximate).

At the present time, then, it costs Jefferson County about \$1,800 per day to take care of the indigent sick. Even this is inadequate because the county is able to purchase only 72,000 days at the prevailing rate of \$9.50 per day. This means that we must, by necessity, deny hospitalization to large numbers of sick people seen in our clinics who otherwise would and should be in the hospital.

The prevailing rate today, therefore, is \$9.50 for each patient day. Since nobody is able to anticipate the exact extent of the charity load that the county will be responsible for in any given year, it is necessary that the county impose a ceiling upon the total amount of money that it can expend for these purposes. Thus, in the current year the county will purchase from the University-owned hospital 72,000 patient days at the prevailing rate of \$9.50 per day—a gross expenditure of \$684,000, or over \$1,800 per day. From this it is easy to compute the precise number of county patients that can be hospitalized by the Jefferson Hospital during the year, which this year will average about 200 per day.

During the period of University ownership and during the period of this contract, the operation has been quite satisfactory. The county is no longer worried with the problems of hospital administration. The institution is free from political control and political appointments. The University operates it as a teaching hospital, usually maintaining about 200-250 charity patients for its educational program. This number is about the minimum necessary for a satisfactory teaching program. In the beginning the University felt that the two institutions should be consolidated. This was done and all patients, charity and pay, white and colored, are now housed in the large Jefferson Hospital. The buildings of Hillman Hospital are now utilized by the Medical School for its various clinical divisions, administrative offices, and by the School of Dentistry.

In the operation of the hospital, it has been necessary to accept for hospitalization a sufficient number of pay patients to operate on a successful financial basis. Because

of the extremely low county rates in the early years of the University administration, the hospital incurred a total indebtedness of nearly \$500,000, which was aggravated by the fact that the inflationary trend was steadily increasing in intensity. Therefore, a combination of these two factors—namely, a rather low per diem rate for hospitalization of indigent patients and the inflationary spiral—was primarily responsible for incurring this large indebtedness. However, since the per diem rate has been established at higher levels which more nearly approach actual per diem costs of operation, and since the inflationary spiral seems to have leveled out at a stationary peak with steadily increasing numbers of private paying patients coming to the institution, the hospital has finally been able to operate without incurring staggering monthly deficits. These deficits became so large about eighteen months ago that it was seriously believed that the institution would have to close its doors. Furthermore, it has been necessary during the past three years to utilize a substantial portion of the Medical College budget in order to enable the institution to remain solvent. In the year 1948-49 approximately \$130,000 of funds appropriated to the Medical College were used for purposes that could be construed as being hospital operative purposes. In addition to this, the 1947 Legislature made a "deficiency appropriation" of \$100,000 per year in order to tide the institution through its financial crisis. It is a source of satisfaction that the crisis has been passed and the teaching hospital has weathered its first major threatened catastrophe.

The annual operating budget of the Jefferson Hospital during the fiscal year 1949-50 will be approximately \$2,500,000. This gross income will be derived from approximately two sources: Less than one-third of it will come in payment for the indigent patients being hospitalized for Jefferson County and more than two-thirds will be derived primarily from revenue from private paying patients. Except for the "deficiency appropriation" noted above, the hospital does not receive one cent of appropriated tax funds from the State Legislature. It must operate on its own revenues, from whatever source it can obtain them. Therefore, it is impossible for the institution to accept indigent patients from Jefferson County or

any other county, or any other source, unless there is some guarantee of payment for hospitalization.

It is important that the doctors of Alabama recognize this fundamental principle; that is, that every patient admitted to the Jefferson Hospital must be paid for by somebody, whether it be by the patient himself, by some unit of government, by a public welfare agency, by the church, by the Red Cross, by civic clubs, or by funds collected by friends. Furthermore, the institution must have some guarantee before it can accept patients that payment for hospitalization will be made. At the same time, it is emphasized that professional services of all types are provided free to indigent people regardless of the county from which they come or who they are.

GROWTH OF THE INSTITUTION

The University has owned the Jefferson Hospital for a period of about five years. During this time the growth of the institution has been phenomenal with respect to the volume of service rendered to the sick people of Alabama. Thus, in the beginning there were 400 patients in the institution and today there are 550 patients about equally divided between indigent and paying groups. In the beginning the outpatient clinics had a work load of some 60,000 patient visits per year; in the year 1950 outpatient visits will approximate 120,000, these patients being serviced in some 33 specialized clinics covering all phases of medicine, surgery, obstetrics, and the various specialties. In addition to this, the institution operates an accident and emergency service in which 68,000 accident cases are seen yearly—that is, one accident on an average of every eight minutes during the year, night and day. It is, of course, obvious that such a large volume of clinical material is proving and will continue to prove invaluable in the training of young doctors and other medical personnel who are in the student body of the Medical College.

Even more important than this is the fact that the efficiency of the institution with respect to rapid turnover of patients has been greatly increased. Whereas the average day stay of the Hillman patient in the older days was approximately eighteen days, it is now between seven and eight days per patient, which is about the same that

prevails with private patients. Thus, with this rapid turnover of large numbers of patients, the institution today stands No. 12 in the United States and Canada with respect to the number of sick people who enter its doors.

The University of Alabama finds itself, then, with one of the most gigantic medical operations on the North American Continent. Although most of the patients who enter the Jefferson Hospital come from Jefferson County and the North Alabama area in general, a substantial number come from all parts of the state. The patients who come here from other counties in Alabama enter either on a paying or indigent basis. If in the indigent group, they are provided with free professional service of whatever type is necessary, but, as stated before, hospital charges must be defrayed by some person or agency.

THE REFERRAL OF PATIENTS TO THE JEFFERSON HOSPITAL

The doctors of Alabama in increasing numbers are calling upon our institution to hospitalize indigent patients from throughout the state of Alabama. There seems to exist considerable misunderstanding with respect to how the hospital is operated. Many doctors seem to believe that since the institution is state owned all that is necessary is simply to send an indigent patient and he will be given complete medical care. Unfortunately, though we would like to do this, it is impossible. Many doctors call us and advise us of a valuable teaching patient he may have in his community and would like to refer here. We are always glad to accept such a patient but only on the condition that someone in his local community defray costs of hospitalization; and, as stated before, the professional services of our staff are given freely and without cost.

The system that prevails at present for the admission of out-of-county indigent patients to the Jefferson Hospital includes a payment of a flat rate of \$12.50 per day for those patients. Their eligibility for hospitalization must not only be certified by their local doctor or public welfare agency but must be further established by our own Social Service Department. This rate of \$12.50 per day includes room, board, all drugs and dressings, the use of operating rooms, laboratory examinations, x-ray

examinations, etc. However, it does not include the administration of blood. In these cases we expect family or friends to replace any blood that is used for such patients.

We also would like to urge the doctors of Alabama, before sending indigent patients to Jefferson Hospital, to notify the institution two or three days in advance so that a bed may be available for the patient. We also require a deposit of \$100 on admission for patients in this classification and further require that their bills be paid on a weekly basis. It makes no difference to this institution who pays the patients' bills—the important point is that they must be paid by somebody. In the strict sense, therefore, there is not a charity patient in the institution. Every patient either pays his own way or his charges are paid by some person, agency, or unit of government.

Patients admitted on the flat rate system described above are under the care of the house staff and Medical College faculty.

RELATION OF THE MEDICAL COLLEGE TO THE HOSPITAL

The Medical College occupies quarters within the hospital proper and also in the older Hillman buildings. Thus, on the roof is the Department of Gross and Microscopic Anatomy; on the fourteenth floor, the Departments of Biochemistry, Physiology and Pharmacology; and on the sixth floor, the Departments of Bacteriology, Pathology, Clinical Pathology, and the Medical Library. Various other educational installations are scattered throughout the entire physical plant. Altogether, this has proved to be a very satisfactory arrangement except for the fact that the quarters are extremely limited, but they will have to continue to serve their purpose until the new Medical College building is constructed. When that is done, the various preclinical departments will then move into the new building and the Jefferson Hospital, therefore, will have about three floors that can be converted into bed space. Consequently, it is anticipated that the inpatient load of the hospital will increase from its present figure of 550 to approximately 700-750 patients when the institution operates at maximum capacity.

From the standpoint of the Medical College, the hospital has proved to be a very satisfactory teaching unit, not only because it is under direct ownership of the Univer-

sity and, therefore, its policies are controlled by the University, but also because of the large volume of clinical material that is present on all sides. Indeed, this fact alone has more than amply justified the wisdom of the Medical College Building Commission in locating the Medical College in Birmingham. It is not unusual for our graduates of the Medical School to have delivered between forty and fifty women before graduation, to have had extended periods of service in the very busy accident and emergency service, to have seen literally hundreds of patients in the teeming outpatient clinics, and, of course, to have carefully studied large numbers of both indigent and private patients in the wards of the hospital itself. This program of full and adequate clinical instruction insures that our graduates will have seen far more than the average amount of clinical material at the time of graduation and this is conducive to the basic policy of the institution which is directed toward the training of general practitioners.

THE STAFF OF THE HOSPITAL

The staff of the Jefferson Hospital, with respect to its private patient division, is what is usually known as an open staff; that is, every doctor who is licensed to practice medicine and who is in good standing in his County Medical Society usually finds the doors of the institution open to him.

The patients in the indigent group, or so-called county patients, are serviced entirely by members of the Medical College faculty. In teaching hospitals it is usually customary to institute what is known as a closed staff but we have not done this in the Jefferson Hospital because of our belief in its value as a great public service institution and the fact that it should be of service to all people, regardless of who their doctors may be. Furthermore, we are of the belief that the educational advantages and opportunities present in the Jefferson Hospital should be made available and easily accessible to all physicians in the area, regardless of their medical college affiliations.

Based upon the foregoing principles then, the Jefferson Hospital still continues to operate and probably will continue to operate as an open hospital. In this way it appears that it can render its greatest service to the people of Alabama.

THE EDUCATIONAL PROGRAM

With the tremendous increase in medical service rendered by the institution, it has been necessary to increase the number of house staff accordingly. Thus, at the present time the house staff is composed of approximately 35 interns, 50 residents, and 15 fellows, making a total house staff of approximately 100 young doctors pursuing programs of postgraduate medical education. The institution is fully approved for long-time training in practically all of the medical specialties. In addition to this, there is operated by the institution a rapidly growing School of Nursing in which 45 to 50 nurses are graduated each year, a School of Anesthesia in which 10 to 12 nurse anesthetists are graduated each year, a School for Laboratory Technicians, a School for X-Ray Technicians, and a Training School for Hospital Administrators. Thus, the institution is fulfilling all of the major educational responsibilities that are ordinarily seen in teaching hospitals throughout the country.

It is a source of satisfaction to know that practically all of the young doctors who finish intern and residency training in Jefferson Hospital, including graduates of other schools, locate in the state of Alabama. Thus, the institution is today paying great dividends to the people of Alabama for the money that has been expended for its acquisition and the small amounts required for its yearly operation.

THE PROBLEMS OF THE HOSPITAL

The problems of the hospital can be divided under two major headings. First, and most important, is the ever recurring financial problem of continued operation. If the professional service rendered in an institution is high-grade, then continued and increasing demands will constantly be made upon it for such service. This has been true in the five years of University-owned operation of Jefferson Hospital. The continually increasing demands for medical service made upon the institution seem to be more than it can render on a satisfactory basis. Thus, we find long lists of patients waiting to be admitted; the clinics seriously overcrowded; and the institution badly understaffed with particular respect to auxiliary personnel. These problems, of course, confront any institution that is called upon to

treat more sick people than its facilities should permit.

Secondly, a major problem in the operation of the institution at present is the current shortage of nursing personnel. Although this shortage is felt in all parts of the United States and in practically all hospitals in Alabama, nevertheless, it appears particularly acute in our hospital. This comes about because of the seeming reluctance of young women to enter the profession of nursing for a variety of reasons. The only way this situation can be corrected at the Jefferson Hospital is the building of a first-class facility for the housing of student nurses and the installation of adequate facilities for a collegiate School of Nursing Education. Only after these things are done will the recruitment of nurses in this field come up to the needs of the institution and, ultimately, to the needs of the state.

The clinics are so badly overcrowded with sick people, with faculty members attempting to teach both house staff and undergraduates in the clinics, that the facilities are sadly inadequate for this purpose. Consequently, a pressing need of the institution at present is the need for increased clinic space. Since this is the most important area for the instruction of senior medical students, it assumes increasing importance as our classes become larger. Temporary measures for the correction of this condition have been instituted this year when one-third of our senior class will receive their instruction in the clinics of the Lloyd Noland Hospital of the Tennessee Coal, Iron and Railroad Company at Fairfield.

THE PATIENTS IN JEFFERSON HOSPITAL

The patients in Jefferson Hospital are of all types—rich and poor, white and black, from Jefferson County, and from the state of Alabama at large. These patients are segregated on the basis of floors. Thus, one floor may be a white, pay patient floor; another a white, county patient floor; another a colored, indigent patient floor; and still another a colored, pay patient floor. In that way the patients are segregated in the institution. This plan has worked out very well and we have found it quite satisfactory to hospitalize patients of all economic levels and both white and colored in the same building.

It is a source of satisfaction to us that the so-called indigent patients in the institution receive substantially the same care as the paying patients, and in many instances they receive even a better type of medical care than the pay patients because of the ease of consultation between various staff members with respect to difficult diagnostic problems. It is still an old truth in our institution, as well as all other teaching institutions, that the indigent patient receives the best type of medical care because of the reasons stated above.

PER DIEM COSTS

The per diem costs of the operation of Jefferson Hospital have steadily mounted during the inflationary years. Our current operating costs are \$13.00 per day and this compares very favorably with operating costs of similar institutions throughout the United States. It is no larger than prevailing costs in similar teaching hospitals in the southeastern cities of the United States and it is considerably below the national level of hospital costs of today.

Although Jefferson County pays the institution \$9.50 per day for its patients, the average paying patient in the Jefferson Hospital will pay between \$15.00 and \$16.00 per day including all types of hospital charges. Therefore, the institution makes up its deficit from the hospitalization of substantial numbers of paying patients. This may appear to be an unfair form of subsidy for medically indigent patients since it is the unfortunate sick element of the population able to pay their way who really have to carry this deficit, but it should be pointed out that since most of the paying patients are also from Jefferson County, the deficit incurred in the hospitalization of county patients is, in reality, made up by the Jefferson County people by paying more for hospitalization than they otherwise might have to pay.

FUTURE OF THE INSTITUTION

At this time the future of the Jefferson Hospital appears to be very bright, not only as an institution of great educational value but also as a great instrument of public service to the people of Alabama. It is already proving its value as an educational institution, and in terms of medical service rendered it stands among the leaders of the Nation. It is anticipated that its ultimate develop-

ment will enable it to care for 800 adult patients when it is completely and fully utilized for strictly hospitalization purposes. This will come about when the Medical College is moved to its new quarters, when the children in the institution are hospitalized in a special children's hospital and when the crippled children are hospitalized in their own institution which is now being built. When this is accomplished, the hospital will come to rank in the first half dozen institutions of this country, not only in number but in fast turnover of patients.

It is, indeed, a fortunate circumstance that the institution was built and finished just before the beginning of World War II; otherwise this magnificent facility would not be available to the people of Alabama and the Medical College would not have it available for its educational program.

Under the present system of offering medical care to indigent peoples of this state, it seems likely that the institution will have to continue to operate for many years from current revenues. Perhaps the day will come when Alabama will be sufficiently prosperous and its economic level sufficiently high so that it can be operated entirely as a state-supported charity institution, such, for example, as the great Charity Hospital in New Orleans, Louisiana. This would, indeed, be a blessing for the indigent peoples of the state of Alabama because then such patients could be accepted here from all parts of the state without payment and it would not be necessary for the institution to accept pay patients of any kind. If this should ever come about, however, it would appear desirable that similar institutions be built in Montgomery and Mobile. We would estimate that approximately 700-800 beds additional would be necessary in these two cities. If the state of Alabama should then decide to operate the three as teaching institutions and give medical care to the indigent of Alabama, the program would be a very progressive one, but, also, would require a yearly appropriation of some \$4,000,000 to \$5,000,000 for the maintenance of three such institutions. This pattern then would be similar to the one that has been operated for many years in the state of Louisiana, in which medical care is provided to all indigent peoples of Louisiana in seven large charity hospitals in that state.

In conclusion, we have attempted in this article to summarize the situation in the University's teaching hospital and, in particular, to ask the continued support and cooperation of the doctors of Alabama in the great program of medical education and medical care that has now been established under the auspices of the State University. To those of us who are responsible for the operation of these institutions, such support of the medical profession of the state has always been our greatest source of encouragement and satisfaction.

PEDIATRIC CASE REPORTS

Edited by
AMOS C. GIPSON, M. D.
Gadsden, Alabama

Case presented by
Benjamin P. Clark, M. D.

This 2 year old white female came to the Clinic because of fever. About three weeks prior to admission she had had some cough but at the time of admission fever was her only symptom. Physical examination was entirely negative. There was no posterior cervical lymphadenitis. Examination of the blood revealed 7,300 leucocytes almost equally divided between granulocytes and lymphocytes. X-ray of the chest was negative. The temperature was 102.6° rectally. A tentative diagnosis of exanthum subitum was made and aspirin and temperature measures prescribed.

The following day the child continued to be febrile with elevations up to more than 104° rectally in spite of treatment. She showed lassitude but no other symptoms. On the third day the blood showed 3,900 leucocytes and the granulocytes had dropped to 13 per cent. The temperature had dropped to 100° rectally. On the fourth day the child had a diffuse, rubelliform rash, the temperature was normal and the child felt well. Two days later all the rash had vanished and the skin was entirely normal. The child had been asymptomatic.

Roseola infantum, exanthum subitum, preeruptive critical fever, etc., are names applied to a clinical entity first described by

Zahorsky in 1910 and 1913 and by others more completely in 1921. This disease is a fairly common one. From ten to fifteen cases will be seen each year by an active practitioner. The disease is world wide, there are no definite seasonal peaks, there is no sex variation, definite epidemics are not seen but several cases are usually seen at about the same time. Age is the most important predisposing factor—95 per cent of all cases occur in infants under two and a half years of age. The specific etiologic agent is unknown. The incubation period has been estimated to be between 8 and 14 days. There are few if any complications although a secondary encephalitis has been reported. There is no mortality.

The symptoms are striking. The child is usually restless, fretful, febrile, and has marked anorexia. The onset may be quite sudden and may be marked by a convulsion. The fever is resistant to usual methods of temperature control. The child is often much worse at night. After from two to five days of fever the temperature drops rapidly, the child feels much better, and a rubelliform rash develops. While various writers give the febrile period as lasting from two to five days it is almost always actually three days, with the rash appearing on the fourth day. The fever almost always falls before the rash appears, which is a valuable differential point. The rash may be very mild or may be quite extensive but usually spares the buttocks and legs. It cannot be distinguished from the rash of rubella. Within two days it fades completely without pigmentation and, generally, without desquamation.

The blood examination is of great value. On the first day of the disease there is a moderate leukocytosis but on each succeeding day there is a progressive leukopenia with a progressive agranulocytosis. The lymphocytes amount to 70 to 90 per cent of the total count which may fall to less than 3,000. After the eruption the blood rapidly returns to normal.

The diagnosis of this condition, even during the preeruptive stage, is not difficult if the disease is kept in mind, if the blood is examined, and if one remembers that rubella is seldom seen in infants. It is satisfying

to be able to reassure the parents and to predict the eruption.

The prognosis is uniformly favorable and the treatment is entirely symptomatic. Isolation is unnecessary and the sulfonamide drugs are contraindicated. The newer antiviral agents are untried in this disease.

Carcinoma of the Stomach—There has been considerable publicity in the lay press recently about cancer, and we doubt that it would be too wise to push this much harder than at present because of the great mental unrest it causes in so many of our unstable individuals. Thus, we are going to have about the same difficulty in the future in seeing people earlier because they are so reluctant to see about little things. In a large series of patients with cancer of the stomach, it was noted that an average of six months elapsed between the time the patient's first symptoms appeared and his visit to the physician. This is almost incredible, but what is more unbelievable is that an average of five months elapsed between the time of the first visit to the physician and his operation. This is the physician's fault and it is this five-month period which we can reduce, and which we must reduce. This five month period is directly the result of and an indication of the vague symptoms of early cancer of the stomach. The majority of the time, we have been too prone to give the patient some tablets or powders and a diet for his indigestion, and ask him to return in three weeks—if at that time he is still having trouble, then we have changed his medicine, etc. Such is the routine pattern of mild dyspepsia—playing along for an average of five months, letting cancer grow larger day by day, while we should have done an x-ray examination by a qualified roentgenologist when the usual simple treatment didn't have the desired effect. This, of course, is going to bring about many examinations which won't find malignancy, still it won't be a waste for it will usually point to some other disease, even if it doesn't it will rid the patient's fears and help him to have more confidence in his physician—for now that he knows that he is being looked after. Everyone appreciates a physician being thorough.

In order to be complete, let us speak briefly of the symptoms of malignancy of the stomach. The typical textbook picture actually is the picture of far advanced cancer of the stomach. Early malignancy of the stomach has no pathognomonic symptomatology—it varies directly with the location of the lesion and with its size and type. It may be epigastric discomfort, belching, a feeling of fullness in the upper abdomen, new idiosyncrasies to certain foods, or just the inability to eat rich, heavy meals where once such could be tolerated. These symptoms are due to some obstruction or constriction in the gastric

lumen—the lack of pliability of the stomach due to malignant infiltration preventing proper movement of the stomach contents. Another early symptom may be fatigue, loss of endurance, or pallor. All of these are caused by anemia which is due to either one or a combination of the following: the lack of Castle's intrinsic factor for maturation of red cells due to involvement of the stomach by the malignancy or due to actual blood loss from the tumor. The symptoms of gastric ulcers may also be the symptoms of gastric carcinoma, for you must remember the large percentage of gastric ulcers that are malignant, and the even larger percentage that are premalignant.

X-ray examination should include a fluoroscopic view of the stomach. This actually is more important than the pictures themselves, for here the actions of the stomach, the peristaltic waves can be watched. Pliability of the stomach may be determined and small defects may be pressed and made to fill out where they otherwise may go unseen. A good fluoroscopic examination by an expert is unsurpassed.—*Davison and Letton, J. M. A. Georgia, June '50.*

Neglected Nasal Fracture—The neglected nasal fracture constitutes a far greater problem than is generally accepted. The concept of the relationship between nasal function and nasal structure is becoming clarified. It cannot be over-emphasized that to have normal function it is necessary to have normal architecture. It is conceded that certain structural alterations do exist and are consistent with a functional nasal cavity. Fortunately nature has endowed the human mechanism with a margin of safety or reserve. Individual differences are, however, the ones with which the physician must deal. When the margin of safety that has existed gradually diminishes and the symptoms of impaired nasal physiology slowly manifest themselves, the patient who has a nearer normal nose, that is, both internally and externally, will have a much better chance of speedy recovery than the one who, other factors being equal, has a distorted nose, or in other words, altered nasal architecture. Or, if symptoms exist in an individual whose psychosomatic nervous system is not easily influenced by pathologic changes, he may accept the half open nose, the postnasal catarrh and the intermittent vasomotor phenomena. They are legion who would seek help if they were reasonably certain that definite help could be assured. Many have heard that the so-called "septum operation" which was done on their neighbor or relative did not help, or perhaps made worse, the primary complaint. So, reluctant to experience a similar unsatisfactory result they decided to leave well enough alone. Not only the general practitioner but the laity at large must be educated that there is that kind of nasal surgery that is constructive surgery.—*Bryant, South. M. J., June '50.*

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LLOYD NOLAND HOSPITAL DEDICATED

With the unveiling of a bronze plaque before the Employees Hospital of the Tennessee Coal, Iron and Railroad Company, the name of the late Dr. Lloyd Noland, Southern pioneer in industrial medicine, on April 22 became permanently affixed to the institution he founded 30 years ago and directed until his death last year.

In dedication ceremonies on the lawn of the hospital, located in Fairfield, Ala., Robert Gregg, president of the Tennessee Company, paid tribute to Dr. Noland as he officially designated the steel concern's infirmary the Lloyd Noland Hospital. Unveiling the stone was Clifford Osborne, negro male nurse who had first become associated with Dr. Noland when the two had served in the Colon Hospital during the construction of the Panama Canal, and had worked with him for the ensuing 43 years.

Featured speaker at the dedication was Dr. G. V. Brindley, of Temple, Tex., president of the Southern Surgical Association. Messages of greeting from Benjamin F. Fairless, president of United States Steel Corporation and Dr. Ernest Edward Irons, president of the American Medical Association were read to the assembly which included relatives and professional friends of Dr. Noland. Master of ceremonies for the occasion was Dr. E. Bryce Robinson, Jr., Dr.

Noland's successor as superintendent of TCI's Health Department.

Dr. Noland had come to the Birmingham District in 1913 at the request of George Gordon Crawford, then president of the Tennessee Company, to assume the task of cleaning up a health situation which saw TCI employees plagued with malaria, typhoid, smallpox and diseases of the digestive tract and resulted in a labor turnover for the company of almost 400 per cent a year.

Under his direction a health service was set up which reached all company villages and which in a space of a few years reduced the incidence of infectious diseases to almost negligible proportions.

Conceived by Dr. Noland and built under his immediate supervision, the 350-bed hospital which now bears his name was completed in 1919. A five-story brick building located within sight of most of the Tennessee Company's major operations, it houses complete medical, surgical and dental facilities for the company's more than 30,000 employees and their families. Since the first patient was admitted in November 1919, more than 200,000 bed patients have been treated within its walls.

In his dedicatory remarks, Mr. Gregg said of Dr. Noland: "I have dealt with him as a co-worker in the great enterprise that we call the Tennessee Coal, Iron and Railroad Company, and have found there the qualities of dynamic leadership and wholesome understanding and cooperation that accounted for his great success as the administrator of our Health Department.

"I have been his patient and have known what it meant to feel his heartfelt human interest in one who was sick. Certainly I know of no finer medicine or tonic."

RADIOACTIVE TRACER TECHNIQUE FOUND ACCURATE IN TESTS

Four New York investigators have reported that the radioactive iodine tracer technique has "greater objectivity and accuracy" than the basal metabolism test in investigating patients with thyroid conditions.

Their study, based on 175 hospital patients, was reported in the June issue of The American Journal of Roentgenology and



Dr. Lloyd Noland
(1880 -1949)

Radium Therapy, which is published primarily for physicians who specialize in x-ray and radium treatment.

The investigators are Sidney C. Werner, M. D., Lawrence D. Goodwin, M. D., Edith M. Quimby, Ph. D., and Charlotte Schmidt, B. A., all of whom are connected with the Departments of Medicine and Radiology, College of Physicians and Surgeons, Columbia University and the Presbyterian Hospital, New York, N. Y.

They said that treatment of toxic goiter with radioactive iodine was started at Presbyterian Hospital three years ago. The radioactive iodine is administered to the patients orally in distilled water. Twenty-four hours later, the uptake in the thyroid gland is measured with a Geiger counter which records the radioactivity.

One phase of the investigators' study was to compare the radioactive iodine tracer technique with the basal metabolism test in routine clinical use.

The basal metabolism test, long in use, is merely a method of measuring how much oxygen the individual uses per hour. When the thyroid hormone supply is inadequate for normal health the rate of oxygen use is reduced, and the basal metabolism may be found as much as 40 per cent below the normal for the age, height and weight of the subject. The same test is used to detect the smaller deviations of thyroid function

from normal when the other evidence is not adequate to make the diagnosis obvious to the physician.

The radioactive iodine tracer technique held many advantages, the investigators found. "It does not require preceding rest and fasting," they wrote. They warned however that the tracer technique "is subject to error and presents certain irregularities."

"However," the article continued, "its accuracy is considerably greater than that of the basal metabolism, it has greater simplicity, is more acceptable to the patient and requires less cooperation from the patient. It seems not unlikely that the tracer test will be used as the method of first approximation of thyroid function, instead of the basal metabolism as at present."

In discussing the use of radioactive iodine for the treatment of toxic goiter, the investigators said:

"One major difficulty stands in the way of general acceptance of internal radiation therapy; namely, fear of later malignant change as a consequence. The collection of radioiodine by the thyroid gland is not symmetrical throughout the gland. Thus some cells may receive an intense irradiation. This has led some workers to feel that cancer of the thyroid after the lapse of some 20 years is not unlikely. This problem remains, and will probably be settled only by the passage of time."

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

WOULD THAT IT WERE

W. A. Dozier, Jr.
Director of Public Relations

It is very often amusing to be met on the street and to be told, "Well, I guess the doctors can quit worrying now. It looks like we won't have socialized medicine." Would that such were true, but life just isn't that way. Granted that a little breathing spell has been possible, during which time some advances of a positive nature could be made on improving health and medical care; but during that time the socializing forces have been very active.

How do matters stand now? No mention needs to be made regarding the November elections. The issue of compulsory sickness insurance will be part of the picture on the national scale, even if not in Alabama. When those elections are over, the country is faced with a new Congress. This naturally means that any bill not passed by the present Congress must be reintroduced before the new Congress may consider it. No one doubts but that a bill comparable to S. 1679 will be presented and the usual course will be run again.

However, as was said above, things have not been as quiet as most people are in-

clined to think. Far from it. Some shifting of tactics is evident in this evolving picture. For some time now the proponents of compulsory sickness insurance have claimed that their plan is not socialized medicine. And there are those who will go so far as to admit that as written, with its many loopholes and pretty phrases, the present bill may not in its strictest interpretation be pure socialized medicine. However, one has to nictitate pretty heavily to overlook the openings that are made by the presently proposed scheme to argue that this would not take us too far along the road to state medicine. There is, however, a resurgence of the cry that the reactionary medics are keeping the people from claiming their rightful due by calling compulsory sickness insurance socialized medicine when it is not that at all. Those who oppose the scheme are, in some quarters, being called liars. The overall pattern on this phase has not changed, however—only an increase in the hue and cry.

Besides untiring efforts by certain people there is the incident which occurred at a luncheon during the three-day Jefferson Jubilee celebration held by the Democrats in Chicago in May. The one purpose of this luncheon seemed to be to inject some life into the Administration's fight for compulsory sickness insurance. A panel of four speakers favoring the scheme were given fifteen minutes. Rebuttals were limited to five minutes and only congressmen or committeemen were given the floor. Thus a full

chance really to air the question was not allowed. This incident is cited not for the incendiary factors therein but for the purpose of pointing out that there is much activity going on that many of us do not know of or completely overlook. Matters are not dormant.

Still on another phase, there is activity on what might be called the Fabian front. Last year's situation with Reorganization Plan Number One is well known. Congress is now faced with Reorganization Plan Number Twenty-Seven. In his message to Congress when he sent over this plan, Mr. Truman said, "The present plan is designed to meet the major objections which were raised in opposition to the 1949 plan when it was disapproved by the Senate."

This present proposal still does not meet recommendations of the Hoover Report which called for a separate department of health. Instead the department proposed in Reorganization Plan Number Twenty-Seven would be the Department of Health, Education, and Security; and the Surgeon General and the Commissioner of Education would be answerable to the Secretary of the proposed new department. This plan is pretty certain to come to the floor of the House or Senate for debate and vote. Thus continues the constant bite by bite technique.

Yes, it would be nice to feel that there is no worry. It would even be pleasant to delude oneself into believing that life is simple. Summer months are hot, and energy is low; but matters politic are not static.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

SLEEP FOR THE RELIEF OF PAIN

The field of medicine has long been one of controversy. Discoveries have been made, and different claimants have stubbornly asserted their rights to them. The profession, learned and dignified as it is, has been torn asunder by factions struggling to advance the claims of one or another individual or group. Perhaps such controversy is one of the prices of progress. Of that we cannot be

sure. We can only be certain that there has been progress and that there has also been controversy.

One of the most bitterly fought controversies of this kind, no less bitter because two of its contenders were outside the medical profession, has had to do with the discovery of anesthesia. It is still unsettled. There are still rival claims and counter-claims. The profession is still badly divided by them. There is little chance that the matter will ever be settled to the complete satisfaction of all groups or individuals. Meanwhile,

the progress of anesthesia goes on. Year after year pain is losing more and more of its sting.

The State Department of Health does not wish to take sides in this controversy, at least officially. But there is considerable admiration for one of the chief actors in that drama of disagreement. There is interest in his side of the case by virtue of his having lived and done his work in one of Alabama's neighbor states. That gentleman, who seemed to be less interested in the credit for that discovery than many of his supporters, was Dr. Crawford Williamson Long. The town where the historic event he fathered occurred was Jefferson, Georgia. The time was March 30, 1842.

Like most other men of science, Dr. Long had an inquiring mind. Whenever he would see anything happen, he wanted to know why it happened. And he wanted to know as much as he could about the thing or things that made it happen.

And so it was that he became interested in nitrous oxide and sulphuric ether, with which he had become acquainted while a student at the University of Pennsylvania. What interested him particularly was those products' capacity for giving people a feeling of exhilaration they did not have before. His interest was whetted by the goings-on at performances given by lecturers touring rural Georgia communities. For, at those lectures, men and women did strange things. They would be invited to the platform and asked to take a few whiffs of ether. In almost no time, those dignified country folk would lose consciousness. And, in that state, they would perform numerous antics that proved extremely amusing to their friends and neighbors watching from the audience. Demonstrations of this kind attracted large crowds.

Dr. Long became more and more interested in ether. But his interest was not entirely what you would call scientific. It apparently did not occur to him at first that there were any important medical possibilities in the product. He thought what fun it would be to invite some of his friends to his office and watch them act like playful children or animals. A number of get-togethers of this kind occurred. The ether-takers got a great "kick" out of the inhalations. The others got a great "kick" from watching them. Soon these parties had attracted consider-

able attention among those small-town residents. They became known as "ether frolics."

Dr. Long tells about them in an article published some years ago in *Hygeia*, now *Today's Health*. In that article he is quoted directly by the author, Hugh H. Young. He said:

"They (his friends) were so pleased with its effects that they afterwards frequently used it and induced others to do the same, and the practice soon became quite fashionable in the county and some of the contiguous counties. On numerous occasions I inhaled ether for its exhilarating properties, and would frequently, at some short time subsequent to its inhalation, discover bruised or painful spots on my person, which I had no recollection of causing and which I felt satisfied were received while under the influence of ether. I noticed that my friends, while etherized, received falls and blows that I believed were sufficient to produce pain on a person not in a state of anesthesia. On questioning them they uniformly assured me that they did not feel the least pain from these accidents. Observing these facts, I was led to believe that anesthesia was produced by the inhalation, and that its use would be applicable in surgical operations."

It was not long before that country doctor had a chance to find out how successful ether could be in actual operation. For about that time one of his patients visited his office suffering from two small tumors. The examination convinced Dr. Long that they ought to be removed. But the patient had a great dread of pain. Indeed that dread had been haunting him for some time. Every time Dr. Long had suggested cutting these tumors out, he had objected to his doing so, at least until some indefinite future time. On this particular visit, the doctor thought of those "ether frolics." Perhaps they held the answer to his friend's fears.

Let him take up the story from there, as quoted in that *Hygeia* article:

"At length I mentioned to him the fact of my receiving bruises while under the influence of ether without suffering, and as I knew him to be fond of and accustomed to inhale ether, I suggested to him the probability that the operation might be performed without pain, and proposed operating on him while under its influence. He consented to having one tumor removed, and the operation was performed the same evening. The ether was given Mr. Venable (the patient) on a towel, and when fully under its influence, I extirpated the tumor.

"It was encysted and about half an inch in diameter. The patient continued to inhale ether during the time of the operation and, when informed it was over, seemed incredulous until the tumor was shown him.

"He gave no evidence of suffering during the operation, and assured me, after it was over, that he did not experience the least degree of pain from its performance."

Dr. Long's natural impulse was to tell the world what he had done. But he restrained it. He wanted to be sure he could defend any claims he might make. So he kept quietly at work, mostly on his general practice. As time went on, however, he performed operations on various patients, relieving them of pain by the new procedure. A few weeks after that first operation, he performed a second on the same patient. That was for the removal of that second tumor. A toe was amputated somewhat later while the patient slept the operation away.

His narrative continued (again as quoted by Mr. Young):

"Surgical operations are not of frequent occurrence in a country practice and especially in the practice of a young physician, yet I was fortunate enough to meet with two cases in which I could satisfactorily test the anesthetic power of ether. From one of these patients I removed three tumors the same day; the inhalation of ether was used only in the second operation, and was effectual in preventing pain, while the patient suffered severely from the extirpation of the other tumors. In the other case I amputated two fingers of a Negro boy; the boy was etherized during one amputation and not during the other; he suffered from one operation and was insensible during the other.

"After fully satisfying myself of the power of ether to produce anesthesia, I was desirous of administering it in a severer surgical operation than any I had performed. In my practice, prior to the established account of the use of ether as an anesthetic, I had no opportunity of experimenting with it in a capital operation, my cases being confined, with one exception, to the extirpation of small tumors and the amputation of fingers and toes.

"While cautiously experimenting with ether, as cases occurred, with a view of fully testing its anesthetic powers and its applicability to severe as well as minor surgical operations, others more favorably situated engaged in similar experiments, and consequently the publication of etherization did not 'bide my time.' "

That reference of course was to his rivals for the honor of being recognized as the father of anesthesia. His supporters contend that those others have only one strictly sound claim to this distinction, that they published the results of their work before he told the world about what he had done. His work, itself, they insist, antedated theirs by about four years. It is up to the individual interested in the controversy to decide

for himself which determines this important matter—the time when a discovery was made or the time it was publicly revealed.

Unfortunately, neither Dr. Long nor any of his rivals derived much happiness or satisfaction from their discoveries. As a matter of fact, all of them would undoubtedly have been far happier if they had never heard of anesthesia.

This gentle country doctor found that superstition could be as rampant and intolerant in Jefferson, Georgia, as in its traditional breeding places. This man who won a measure of fame almost entirely by accident and, apparently, conducted himself with proper modesty and decorum throughout, was accused of a crime closely akin to witchcraft. Percy Hutchison was thinking of that when he wrote in *The New York Times*: "A curious state of affairs came about, showing that men's fear of the devil, in Jefferson at least, was greater than their fear of pain." Mr. Hutchison's article goes on:

"Because he could put people to sleep, Long must be in league with Satan; his practice fell away, he was shunned on the street. The puzzled doctor promised to use ether no more, buried his formula in the ground, and resumed his cheery way of painful operating."

The others fared even worse. Dr. William Morton, a Boston dentist, who administered ether on October 16, 1846, succumbed to apoplexy. That would have been tragic in itself. But it was more so, people say, because it was brought on by the ether controversy: It resulted, we are told, from reading a violent personal attack upon him by one of the enemies whom the ether controversy had created. Even before that happened, he was reduced to poverty and his professional reputation ruined by those same enemies. Charles T. Jackson, a well known chemist, who claimed he had given Dr. Morton the idea of using ether as an anesthetic, lost his mind and died in an insane asylum. The fourth member of this controversial quartet was Dr. Horace Wells, also a dentist. His widow claimed that he had used laughing gas to deaden pain while he extracted teeth. He committed suicide. Truly, in this case at least, the paths of glory, or at least of struggle, bitterness and a measure of fame, led but to the grave and to unhappiness.

In his already mentioned *Hygeia* article, Mr. Young reminds us of what a great dif-

ference the introduction of anesthesia has made in the treatment of disease. In an average year before that great boon was given humanity, he says, only 34 surgical operations were performed at the Massachusetts General Hospital. A short time afterward operations were averaging about a hundred a year. But that was only the beginning. During the next half-century they increased a hundred fold. Nowadays of course surgery is quite commonplace. Hardly any part of the body is out of reach of the surgeon's healing touch. And in practically all forms of surgery, from a simple, uncomplicated appendectomy to the removal of a lung or a massive cancerous area, the patient sleeps through the ordeal as painlessly as though he were in his favorite bed at home. After watching one of those early anesthesia-eased operations a physician turned solemnly to a fellow-physician and said: "Our craft has, once and for all, been robbed of its terrors."

How wisely and prophetically he spoke!

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

APRIL 1950

Examinations for diphtheria bacilli and Vincent's	215
Agglutination tests (typhoid, Brill's and undulant fever)	1,099
Typhoid cultures (blood, feces and urine)	368
Examinations for malaria	279
Examinations for intestinal parasites	3,504
Serologic tests for syphilis (blood and spinal fluid)	23,179
Darkfield examinations	13
Examinations for gonococci	1,959
Examinations for tubercle bacilli	3,055
Examinations for meningococci	2
Examinations for Negri bodies (microscopic)	116
Water examinations	1,389
Milk and dairy products examinations	3,821
Miscellaneous	737
Total	39,736

Simultaneous Immunization—Simultaneous immunization with diphtheria, tetanus, and pertussis antigens is feasible. Improvement in the production of media testing and in the manufacture of purified toxoids permit of the preparation of combined antigens of good immunizing power, acceptable dose volume, and relative freedom from untoward reactions.—*Sauer et al., Am. J. Pub. Health, June '50.*

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1950

	Mar.	Apr.	E. E.* Apr.
Typhoid	3	5	4
Undulant fever	5	6	5
Meningitis	10	14	16
Scarlet fever	49	46	64
Whooping cough	96	93	163
Diphtheria	21	21	21
Tetanus	2	3	3
Tuberculosis	204	228	265
Tularemia	7	3	1
Amebic dysentery	1	7	2
Malaria	3	3	56
Influenza	2764	2225	433
Smallpox	0	0	0
Measles	233	481	955
Poliomyelitis	3	3	2
Encephalitis	1	0	1
Chickenpox	327	625	182
Typhus	8	8	12
Mumps	171	248	229
Cancer	349	447	182
Pellagra	0	2	3
Pneumonia	393	380	371
Syphilis	910	1097	1378
Chancroid	13	21	13
Gonorrhea	342	395	496
Rabies—Human cases	0	0	0
Positive animal heads	37	46	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

AN EXPERIMENT WITH THE ALPHABETICAL GRADING OF FOOD HANDLING ESTABLISHMENTS

Contributed by
B. E. Phillips, B. S.
Prin. Sanitarian

The State Board of Health is charged by statute with the duty of promulgating "regulations for the construction, maintenance, and operation of all establishments, and their immediate surroundings, in which food or beverages intended for human consumption are made, prepared, processed, displayed for sale, or served," in order that uniform requirements and standard procedure may guide and govern the personnel of the State and County Health Departments in their efforts to protect the public health from diseases which may be transmitted through food and beverage establishments. Such regulations were promulgated in conformity with the above provision of the statutes by the adoption of the present State Food Regulations on October 1, 1937.

The adoption of these State Food Regulations by the various counties was made optional; that is, these regulations were of-

ficially adopted by a county only whenever the State Health Officer officially advised the Judge of Probate of such county that the Health Department was in position to enforce the regulations in said county as provided for in Title 22, Section 85, of the Code of Alabama, 1940, as amended.

The State Food Regulations were adopted in Tuscaloosa County in the manner outlined above on March 16, 1943. Before this time no organized inspection activities had been conducted within the county and outside the city limits of Tuscaloosa. Little work had been done in the city proper, and none on an organized overall basis.

At the beginning of the program, personnel was limited and poorly trained in food inspection work. Standards at which compliance would be considered satisfactory were not well fixed in the minds of the personnel, and naturally could not be conveyed intelligently to the operators. Debit values in regards to violation of items having to do with methods had not been standardized. No two inspectors could arrive at the same sanitary score when inspecting an establishment simultaneously, except by accident.

Sanitary scores arrived at in such haphazard manner were hardly worthy of being posted conspicuously in the respective establishments, and such methods made it impossible to maintain inspection records that were reasonably consistent from month to month. All this led to confusion on the part of the inspectors as well as on the part of the operators.

Even under these hit and miss methods we feel that the members of the inspection personnel in Tuscaloosa County made some progress in the food sanitation program. They were unconsciously becoming better teachers and salesmen, and were fixing in their minds definite standards as regards debit values and degree of compliance. Many progressive operators came to know that sanitation was a very valuable selling point. A survey of public opinion conducted by the University of Alabama, at the request of certain food establishment operators in the city of Tuscaloosa, indicated that sanitation of a food establishment had a greater appeal to the general public than did either prices or courtesy.

By the use of the present State Food Regulations and salesmanship, and also spurred

by competition, many operators were caused to go beyond our regulations in the way of structure, facilities and methods. This indicated the need of more stringent regulations.

Considerable work was being done by the Division of Inspection of the Bureau of Sanitation of the State Health Department at about this time, that is about 1945 and 1946, in an effort to raise the standards of the present State Food Regulations and at the same time provide for an alphabetical grading system. It appeared that what was being formulated would very closely satisfy the needs of all counties.

In the summer of 1948 sufficient interest was shown by the Tuscaloosa County Health Department to warrant consideration for setting up standards for the use of a grading system on an experimental basis in food control activities on a county-wide basis. Regulations necessary for the promotion of such a program were approved by the Tuscaloosa County Board of Health on November 30th, 1948, after obtaining approval of the State Department of Health. Standard debit values as regards violations of methods were adopted at the same time.

No attempt will be made to go into the provisions of these revised regulations here. Space will not permit such discussion. They have their shortcomings as well as their high points of advantage. Suffice it to say that the food sanitation program in Tuscaloosa County has shown more progress during the last three years than at all previous times. The program is highly respected by both the operators and the public.

For example, at the beginning of this program every meat market in Tuscaloosa County was operating with sawdust on the floors; at the present time there are only 3 such operations. Of the 152 meat markets, no floor was properly graded and drained. There are now only 27 such floors, and they are being progressively eliminated. Only 3 of these markets were equipped with hot water under pressure, and this at a temperature of about 140 degrees F.—sufficiently hot for cleaning operations only. Today 139 of these markets are equipped with automatic water heating facilities producing water well above 170 degrees F.—sufficient for both cleaning and bactericidal treatment of utensils and equipment. The same 139 markets are equipped with a sewer connect-

ed sink of sufficient size to allow for complete immersion of the largest piece of equipment ordinarily washed at a sink.

At the start of this program only 3 restaurants had floors properly graded and drained, and only one had an ample supply of water sufficiently hot to render effective bactericidal treatment. Today all eating establishments within the county have kitchen floors properly graded and drained. They are all equipped with auxiliary heat for the purpose of assuring ample hot water for effective bactericidal treatment, except 5 very small establishments catering to colored people, which have demonstrated their ability to produce ample hot water under pressure.

Many other items of improvement incident to this program might also be noted; such as, enlarged working areas, the use of impervious wall materials, the replacement and relocation of equipment, improved facilities for the storage of repeated service vessels and utensils, the installation of dry refrigeration for all beverages, the installation of hand washing facilities within the working areas, the better attitude toward the use of proper uniforms, hair nets and caps, then, the greatest of all, a decided improvement in the attitude of the operators and the general public toward the food sanitation program.

There is still much to be done in Tuscaloosa County as is indicated by the fact that there are now, of the 420 food establishments operating within the county, 90 establishments displaying "C Grade" cards, or probationary cards. One hundred seven (107) establishments are displaying "B Grade" cards. The "B Grade" indicates the establishment to be in satisfactory compliance with state regulations but not in full compliance with the county regulations. One hundred sixty-one (161) establishments are displaying "A Grade" cards, indicating their satisfactory compliance with both state and local regulations, with a score of 95 or above. Of the total there are 62 school lunch rooms that as yet have not been graded but are under regular supervision leading to grading standards.

The provisions of these regulations are enforced under the assumption that the County Health Officer has authority under Title 22, Section 85, of the 1940 Code of Ala-

bama as amended, to revoke or suspend a permit for the operation of a food handling establishment, making its continued operation unlawful. However, the success of the program is not due to enforcement but rather to the elements of salesmanship and education. The County Health Officer has worked out plans for further advancing this program through the services of a full-time instructor of food handlers. This service is to be supplied by the use of federal and state funds provided for in the Smith-Hughes Act.

This entire program is looked upon as an experiment, and even though it appears to have a tremendous advantage over the old approach the need for certain changes is indicated.

Dysmenorrhea—Although the dysmenorrhoeic patient displays no consistent lowered B. M. R., thyroid, one of the originally discovered hormones, which has stood the test of time, is frequently given on a purely empirical basis. Progesterone, because of its supposed relaxation of the uterus, is recommended by many, including Smith, Smith and Schiller, who feel there is a decreased estrogen level as a result of decreased progesterone activity. Harding, however, felt that progesterone was ineffective but pregnenolone was effective and benefited 73 per cent of his patients by its administration. Since it is generally agreed that dysmenorrhea is associated with an ovulatory cycle an adequate amount of progesterone appears to be present in these cases, maturation of the graafian follicle with its ovum being impossible without sufficient progesterone stimulation. The presence of ovulation associated with this entity has recently prompted some to use large doses of estrogens and androgens in an attempt to suppress this function and relieve the symptoms of dysmenorrhea. Good results have been claimed by many. In spite of the relief obtained, it hardly seems justified, since other measures have given equally good results. The treatment is contrary to the normal physiology, and the danger of the androgens producing masculinization from prolonged use is apparent.

Because of the supposed deranged carbohydrate metabolism, insulin has been given with varied success. However, neither blood nor urine studies in these cases show any marked variation from the normal.

Vitamins, with their structural formulae similar to the hormones, may have their place in the treatment of this condition: vitamin B for its marked neurogenic effects; vitamin E for its beneficial vascular response, and the remainder of the present known group for whatever deficiency may be present.—*Leidenheimer, New Orleans M. & S. J., June '50.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR FEBRUARY 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During February 1950			February Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	6248	**	**	26.3	28.4	29.9
Total stillbirths	141	**	**	22.1	26.5	24.4
Deaths, stillbirths excluded	2083	1201	882	8.8	8.3	9.8
Infant deaths:						
under one year	191	92	99	30.6	34.0	41.9
under one month	128	62	66	20.5	20.2	24.3
Cause of Death						
Tuberculosis, 001-019	60	33	27	25.2	36.6	30.2
Syphilis, 020-029	10	4	6	4.2	4.6	11.5
Dysentery, 045-048	1	1		0.4	1.3	***
Diphtheria, 055	2	2		0.8		1.7
Whooping cough, 056	3	1	2	1.3	2.1	2.1
Meningococcal infec- tions, 057	1		1	0.4	0.8	1.3
Poliomyelitis, 080, 081	1	1		0.4		0.4
Measles, 085					2.5	0.4
Malaria, 110-117					0.4	0.4
Malignant neoplasms, 140-200, 202, 203†	200	142	58	84.1	70.6	80.3
Diabetes mellitus, 260	20	13	7	8.4	7.6	11.9
Pellagra, 281	5	3	2	2.1	1.7	4.7
Vascular lesions of central nervous system, 330-334	253	153	100	106.3	87.0	90.5
Other diseases of nervous system, 300-318, 340-398	30	14	16	12.6	17.2	15.7
Rheumatic fever, 400- 402	5	4	1	2.1	1.7	1.3
Diseases of the heart, 410-443	609	350	259	256.0	255.1	241.8
Diseases of the arte- ries, 450-456	44	36	8	18.5	11.8	9.8
Other diseases of the circulatory system 444-447, 460-468	30	15	15	12.6	18.5	3.0
Influenza, 480-483	33	12	21	13.9	8.0	21.2
Pneumonia, 490-493	109	55	54	45.8	34.9	73.5
Bronchitis, 500-502	8	6	2	3.4	3.8	3.0
Appendicitis, 550-553	8	4	4	3.4	2.1	3.4
Intestinal obstruction and hernia, 560, 561, 570	13	6	7	5.5	5.0	5.5
Gastro-enteritis and colitis (under 2) 571.0, 764	5	5		2.1	4.2	3.4
Cirrhosis of liver, 581	17	16	1	7.1	4.6	5.5
Diseases of pregnancy and childbirth, 640- 689	11	5	6	17.2	8.6	19.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 682, 684	1	1		1.6		5.5
Congenital malforma- tions, 750-759	22	13	9	3.5	3.0	3.1
Accidental deaths, total, 800-962	102	71	31	42.9	45.4	68.4
Motor vehicle acci- dents, 810-835, 960	51	35	16	21.4	11.8	24.6
All other defined causes	378	205	173	158.9	143.3	194.2
Ill defined and un- known causes, 780- 793, 795	103	31	72	43.3	51.3	82.4

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the February report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

The Respirator in Poliomyelitis—The act of placing a patient in a respirator should be accomplished as quietly and efficiently as possible. It can best be done by a team of three, but two efficient operators can do it if the patient is not too heavy. The respirator should have been prepared and ready, with a collar of the proper size and with the cot made up with sheet, rubber sheet, and draw sheet in place. After the patient has been placed on the cot with his head near the collar, sandbags, pillows, and other articles that will be needed for positioning should be placed on the foot of the cot. The patient's neck should be protected by a diaper folded into a long flat "roll" or by cotton batting covered with soft material. This is most easily wrapped around the neck before pushing the head through the collar. The collar opening should be stretched by use of leather straps or, if these are not provided, strips of gauze may be used. One of the team should stand at the head, placing a hand through the collar opening to protect the patient's nose while the other hand supports the head when it emerges. The patient is then lifted slightly and moved horizontally so that the head is pushed through the opening in the collar. The head rest should be adjusted immediately so that the head is in a comfortable position, and then the straps or gauze strips that were used to stretch the opening are released so that the collar fits snugly on the wrapping around the patient's neck. The shoulders should rest against the headpiece of the cot; they may be protected by using pads of cotton batting or pieces of sponge rubber. The head end of the cot may be raised or lowered by means of a crank so that the trunk is in comfortable alignment with the neck and head.

The amount of negative pressure required will vary with different patients and in different stages of the disease. Small children usually require 12 or 14 cm. (water pressure) while older children and young adults require 16 to 18 cm. As the patient improves, the negative pressure usually can be decreased. A little alternating positive pressure (5 cm.) may be used if it makes the patient feel better. An attempt should be made to use the pressure that is required for each patient. The rate of respirations is controlled either by changing the belt between the motor and the pulley that moves the bellows, using different combinations of pulleys for different speeds, or by use of a crank that moves the motor and tightens or loosens the belt. Small children usually require a rate of 20 to 24 respirations per minute while older children do well with a rate of 16 to 18.

Poor results come from improper use as well as ill-timed use of the respirator. Too much negative pressure may result in over-ventilation, washing out of carbon dioxide from the alveoli, and alkalosis. Too little negative pressure does not allow sufficient ventilation to provide proper oxygen and carbon dioxide exchange.—Hild, *Texas State J. Med.*, June 1950.

BOOK ABSTRACTS AND REVIEWS

Brucellosis. Clinical and Subclinical. By Harold J. Harris, M. D., F. A. C. P. Second edition, revised and enlarged. Cloth. Price \$10.00. Pp. 617 with 111 illustrations, 12 in color. New York: Paul B. Hoeber, Inc., 1950.

Approximately one fourth of this book is devoted to symptomatology and one sixth to diagnosis. Prognosis as to mortality is encouraging; that to morbidity is less favorable. Chapters on treatment including prophylaxis cover one hundred pages. However, your reviewer suggests that the Addenda be read first for if the antibiotics had been used longer, treatment would probably cover fewer pages and been more conclusive. It is an exhaustive work but one which is well worth the reading.

B. Woodfin Cobbs, M. D.

The Cytologic Diagnosis of Cancer. By the Staff of the Vincent Memorial Laboratory of the Vincent Memorial Hospital. A Gynecologic Service Affiliated with the Massachusetts General Hospital, Boston, Massachusetts. The Department of Gynecology of Harvard Medical School. Published under the sponsorship of the American Cancer Society. Cloth. Price \$6.50. Pp. 229, with 153 figures. Philadelphia and London: W. B. Saunders Company, 1950.

The book is the natural outgrowth of the long and varied experience of the Vincent Memorial Laboratory in interpreting smears of secretions for the diagnosis of cancer from exfoliated cells. It is presented as a laboratory manual. Thus material from a clinical viewpoint is omitted. The text was written by Mrs. Ruth M. Graham and other members of the Vincent Memorial Laboratory staff. It is an excellent guide in the cytologic diagnosis of cancer from vaginal smears, smears of sputum or bronchial aspirations, urine sediment, gastric secretion, and the sediment of serous fluid. For each type of tissue there is a section on the cytologic histology presented for orientation. This is followed by a black and white photomicrograph and colored drawing of a field of classical desquamated cells derived from that epithelium. All cells are not typical, however, but show varying degrees of deviation. A discussion of these variations follows; then the difficulties in interpretation are considered and the general criteria for identification listed. An excellent chapter on the technique of collecting and preparing smears for study is included.

Since this is a laboratory manual, it will appeal mainly to the laboratory worker who is interested in the cytologic diagnosis of smears. The close study of the text and accompanying illustrations will give the student a good introduction to cytologic histology and pathology.

Hugh V. Bell, Jr., M. D.

Gynecologic Diagnosis. By Robert Tauber, M. D., F. A. C. S., F. I. C. S., Associate in Gynecology and Obstetrics, the Graduate School of Medicine, University of Pennsylvania; Diplomate, American Board of Obstetrics and Gynecology. Cloth. Price, \$6.00. Pp. 266. New York: Thomas Nelson and Sons, 1950.

This book is unique in the field of gynecology in that it is devoted exclusively to diagnostic problems in gynecology. No space is devoted to routine discussions of etiology, pathology, or treatment; it deals with diagnosis only. The first three chapters cover history taking, physical examination, and laboratory tests. The author stresses the value and method of a complete and detailed history and he gives a simple method of transcribing and abbreviating the history with many short-cuts in writing. The chapters on physical examination and laboratory examination are complete but more or less conventional.

The author calls the latter two-thirds of the book a "Diagnostic Clinic." This consists of the presentation of the history and physical and laboratory findings on a series of thirty-three cases. After the presentation of each case comes a discussion of the findings and the differential diagnosis with comments. This book is well written and well illustrated. It will serve the reader as a good review of gynecologic diagnosis. It is very much recommended to the general practitioner who sees many baffling gynecologic cases.

Joe W. Perry, M. D.

Geriatric Medicine. The Care of the Aging and the Aged. Edited by Edward J. Stieglitz, M. S., M. D., F. A. C. P., Attending Internist, Suburban Hospital, Bethesda, Maryland; Doctor's Hospital, Washington, D. C.; Attending Internist (Geriatrics), Chestnut Lodge, Rockville, Maryland; Consulting Internist, Washington Home for Incurables; Associate, Washington School of Psychiatry; Special Lecturer, Institute of Industrial Medicine, New York University, Bellevue Postgraduate Medical School, New York City; formerly Associate Clinical Professor of Medicine, Rush Medical College, the University of Chicago. Second edition. Cloth. Price \$12.00. Pp. 773. Philadelphia: W. B. Saunders Co., 1949.

This text, on probably medicine's most recent born specialty, is edited by Dr. Stieglitz, but has some forty-seven contributors all of whom are authors or co-authors of its forty-four chapters. Its contributors, chiefly from the East and Mid-West, are authorities in their respective fields, and the majority are well known—Carlson in physiology, Overholser in psychiatry, Amberson in diseases of the chest, Sprague, Stroud and Irving Wright in cardiology, Morris Piersol in diseases of the liver, and Pelouze in urology, to name a few.

The first quarter of the text deals with general considerations of geriatrics. It pleads that geriatrics not be considered synonymously with senility, that it includes the aging as well as the aged, that pessimistic palliation is not the limit of its scope, that the gerontologist may hold the same position for an asymptomatic patient of fifty years in an annual physical examination as a pediatrician may hold for an eight month old child in a well-baby clinic. Surprising, and almost excessive, statistics and charts are comprehensively presented in a manner not seen elsewhere. To make this section complete the sociological aspects of the aged are discussed in terms of industry, recreation, nursing homes, etc.

After this rather lengthy introduction, the remainder of the material is presented in a manner similar to that of any standard text of medicine, running the gauntlet from disorders of metabolism to disorders of the cutaneous system. Appropriately more space is devoted to disorders of highest incidence in the aging. In some instances the same information could be obtained from a "Cecil," but several chapters contain what is felt to be the latest "dope," explicitly written, in regard to the age group considered. There is an excellent chapter on the normal senile heart, and another contains very convincing words of caution in regard to the over-interpretation of electrocardiograms of the aging. The brief chapter on geriatric anesthesia is concise, specific and informative.

As would be expected of any text written by a number of contributors the style and, to some extent, the aim varies. It is felt that the text would prove valuable to the general practitioner, internist, general surgeon, orthopedist, urologist, and psychiatrist.

Hamilton Hutchinson, M. D.

Handbook of Obstetrics and Diagnostic Gynecology. By Leo Doyle, M. D., M. S. Paper. Price, \$2.00. Pp. 240, with 44 illustrations. Palo Alto, Cal.: University Medical Publishers, 1950.

This is a 240 page book which presents much useful information in very little space and with a minimum of verbosity. It covers practically every phase of clinical obstetrics from diagnosis of pregnancy to management of the puerperium.

There is a chapter on the emotional aspects of pregnancy and the puerperium which shows a keen insight into the subject and covers the subject as thoroughly in a few small pages as most texts do in three times the space.

Most every chapter is in outline form but the matter is well presented and where discussion is needed there is a reasonably complete discussion. Controversial subjects have been avoided wherever possible. For a handbook, there is a generous number of illustrations, some of which are original and some are adapted from other texts. Many subjects requiring differential diagnosis are presented in tabular form. There are no lengthy descriptions of surgical procedures but the usual obstetric operations and maneuvers

are adequately described and illustrated.

The last 37 pages of the book are devoted to "diagnostic gynecology." This portion of the book, too, is well arranged and well presented. It includes discussions of menstrual physiology, menorrhagia and metrorrhagia, dysmenorrhea, amenorrhea, menopause, leucorrhea, cellulitis, diagnosis of pelvic masses, sterility, and endometriosis.

This book is a "handbook" in the strictest sense. It is small enough to fit into one's pocket and is paper-bound. The paper is thin and the type small. For a book of the synopsis or handbook type, it is exceptional in that it is readable, brief, concise, and complete.

The book can be a valuable aid for the general practitioner as a handy and readily available source of useful information. For the price of \$2.00, no better book can be found.

Joe W. Perry, M. D.

The Physiology of Thought. By Harold Bailey, M. D., F. A. C. A. Cloth. Price, \$3.75. Pp. 313. New York: The William-Frederick Press, 1949.

The amazing variety and complexity of thought has piqued the curiosity of psychologists and philosophers from Piltdown to Topeka. The mechanism and function of thought continue to absorb their efforts with a consistency that makes the search for an explanation almost as characteristically human as is thought itself.

The author draws his material almost entirely from the works of McDougall and James, and, with far more enthusiasm than exactness, from Freud and Adler. While there is an implication of originality of ideas expressed by the author in his preface, the text fails to reveal it. However, the adherence to current theories of physiologic psychology makes the book acceptable as a fairly satisfactory review of the subject for lay consumption.

The author's treatment of the physiology and development of the nervous system is adequate. He treats memories, emotions, instinct and heredity with the self assurance of one who stands on long established footing. Consciousness, sleep, dreams and thought fatigue are handled with similar self assurance but with considerably less scientific support. His occasional invasions into psychiatry are unfortunate and presumptuous intrusions. Statements such as "if a man overeats at his evening meal and has nightmares in consequence, we could not attach much importance to a dream with such a source" would have found more comfortable surroundings in a 19th century book of home remedies. Much that is theory is presented as fact, and much that is fancy is presented as theory. Oversimplification is all too frequently encountered.

This is not a bad book—nor is it a good one. It is just another of the tiresome spate of books on psychology and psychiatry written for the layman.

Philip S. Bazar, M. D.

Coagulation, Thrombosis, and Dicumarol. With an appendix on related laboratory procedures. By Shepard Shapiro, M. D., Assistant Professor of Clinical Medicine, New York University College of Medicine; and Murray Weiner, B. S., M. S., M. D., Fellow in Medicine, New York University College of Medicine. Cloth. Price, \$5.50. Pp. 131. New York: Brooklyn Medical Press, Inc., 1950.

This is a short book dealing with all phases of Dicumarol therapy. There is a discussion of the nature and the function of the clotting processes, and the development and chemistry of Dicumarol with all of its clinical features. Its use in the treatment of intravascular thrombosis is dealt with in detail. The mode of clinical application is discussed thoroughly. There is an appendix which deals with all of the laboratory procedures which may be used along with Dicumarol therapy.

This is a very excellent book giving all of the information regarding a drug which is being used more and more. It is an excellent book for those intending to use this drug.

C. A. Willis, M. D.

The Merck Manual. Cloth. Price, \$4.50 for regular edition; \$5.00 for thumb index edition. Pp. 1592. Eighth edition. Rahway, N. J.: Merck & Company, Inc., 1950.

There are approximately 1600 pages in this new and revised Merck Manual, with the latest and most pertinent information on medical subjects up to the time the manual went to press on May 1, 1950. It is divided into two parts, the first of which is devoted to diseases and major symptoms, requiring some 338 pages for coverage. The second part includes chapters on routine immunization measures, clinical and bedside procedures, laboratory tests practicable for the doctor's office, suggested items for the physician's bag, an outline of preoperative and post-operative care, a section on diets, and helpful ready reference data and conversion tables.

There are some 1,175 prescriptions conveniently arranged in categories according to therapeutic action and listed at the conclusion of each section. There are a number of proprietary products mentioned. However, other preparations of a similar nature may be available and usually are available. The majority of the prescriptions call for drugs included in the thirteenth edition of the *United States Pharmacopoeia*, the eighth edition of the *National Formulary*, and *New and Nonofficial Remedies*, 1949.

Emphasis has been placed on the diagnosis and treatment of diseases, although the pertinent physiology and pathology for each condition discussed are included. This is important for intelligent understanding and rational treatment of the disease. The manuscript is easy reading, the meaning is clear, and superfluous material omitted. The busy clinician has a ready and concise source of information on medical subjects in

this manual. Surgery when indicated is mentioned but no description of the surgical procedure is given.

Hugh V. Bell, Jr., M. D.

Life Among The Doctors. By Paul De Kruif, in collaboration with Rhea De Kruif. Cloth. Price, \$4.75. Pp. 470. New York: Harcourt, Brace and Company, 1949.

Paul De Kruif has many readers in Alabama, thanks to his many articles in the Reader's Digest and other magazines and the ten or more books which have flowed from his fast-moving typewriter. To a much smaller number of Alabamians his name has the familiarity of personal acquaintance, in some cases long-standing, in others extremely slight. And anyone of either group knows that Paul De Kruif has strong views about medicine and medical care. *Life Among The Doctors* is typical De Kruif.

He lets you know at the outset that he is going to continue his role as critic of doctors, but not a carping critic. He tells you that the Dr. before his name does not mean M.D. but Ph.D. Speaking as an outsider, he insists that he speaks with the freedom of one not exposed to the charge of disloyalty to his kind.

On the whole, *Life Among The Doctors* contains relatively little criticism of physicians and the medical profession as such from this crusading non-physician. There is very little indeed to which they, as a group, can take exception. The book is more of a vigorous sides-taking in matters on which doctors themselves widely disagree. He says some pretty harsh things about some doctors. But he says some pleasant things about others.

Undoubtedly, the intraprofessional dispute of most interest to Alabamians, of the several in which he breaks a lance, is that involving Dr. Tom Spies, whose work at the Hillman Hospital, in Birmingham, is well known. From page 44 to page 140 he lets you know in sparkling terms what he thinks of this rugged Texan and of those who oppose him.

Paul De Kruif is no fair-weather friend, at least in his public utterances. In those 96 pages he tells glowingly and with the enthusiasm of a convert about Dr. Spies' work among the hunger-sick of Jefferson County and other parts of Alabama. In his mind, those who have opposed that work or failed to share the De Kruif ardor for it have something seriously wrong with them. He hints that it is an over-anxious concern for their own financial gain.

Dr. Spies does not dominate the book of course, except in the eyes of Spies admirers and detractors. There are incidents involving President Roosevelt and his decision, under the ponderous pressure of an impending World War, to spend billions for tanks, bullets and planes instead of health. Dr. C. C. Young, father of Michigan's public health laboratory; Dr. Herman N. Bundesen, Chicago Health Commissioner; Dr. Alvin F.

Coburn, general in the war against rheumatic fever; Dr. Emanuel Libman, enemy of subacute bacterial endocarditis (S. B. E., as Dr. De Kruif calls it); Dr. Leo Loewe, also an aggressive warrior against that killing and crippling condition—these and many others are swept into the De Kruif mill. Each contributes a part to the man-against-disease story.

Those who have read Paul De Kruif's articles and earlier books do not need to be told that he writes with earnestness and vigor. They know that he tells his story, whatever it may be, well and with the swift sweep of clear, moving narrative. In *Life Among The Doctors* he fully lives up to his reputation.

John M. Gibson

Sexual Deviations. By Louis S. London, M. D., Diplomate, American Board of Psychiatry and Neurology, Member, American Psychiatric Association, Fellow of the American Medical Association and other medical societies; and Frank S. Caprio, M. D., Member, American Psychiatric Association, Society for the Advancement of Psychotherapy, American Medical Association and other medical societies. Cloth. Price, \$10.00. Pp. 667. Washington, D. C.: The Linacre Press, Inc., 1950.

The publication of an authoritative book on sexual deviations is especially timely. An aroused citizenry is demanding of its state and local governments some aggressive legislation directed to the control of the rash of sex crimes which has received lurid exploitation at the hands of unprincipled newsmen. Its publication in Washington may be especially timely since a senatorial committee, notoriously befuddled in the focus of its investigations, is now bent on investigating sexual perversions in the State Department, and could use such a book to determine precisely what it is they are hunting.

The book is divided into three parts. The first part concerns itself with theoretical considerations and covers a historical survey of the evolution of our attitudes towards sex and its perversions, a review of the basic Freudian concepts of infantile sexuality and a chapter describing the libidinal components which analysts claim to be the basis for much that is sexually deviated. Of especial value to all who are interested in this subject is the obvious conclusion that many of our conventional attitudes and sexual codes have been established on an arbitrary basis and that those who presume to legislate or decree what is good or normal for man or society must do so with information extracted from many sources, of which a few at least must be able to lay claim to some objectivity.

Part two is devoted to reports on cases in the authors' clinical experience representing most of the recognized types of sexual deviation. Each report is packed with analytic detail. The direct quotes from associative productions would bear a more convincing tang of verisimilitude if they were not presented in uniform style despite the obvious disparity of intellectual, educational and cultural attainments of each patient. Included

are a variety of sexual problems not generally considered deviations, such as philandering, bigamy and polyandry, prostitution, pandering and white slavery, to which the authors attribute a paraphiliac significance.

Part Three summarizes the therapeutic and sociological aspects of this problem. The conclusions drawn are that common to all deviations is a psychosexual regression with fixations of oedipal or electral coloring. The authors reject the practice of classifying these disorders as constitutional psychopathic states. The chapter on medico-legal management of sex offenses reflects generally the currently held concepts of psychiatrists of all disciplinary faiths, with the exception that not all are as soundly convinced of the efficacy of analysis as a therapeutic answer. Certainly the imprisonment of all such offenders as is practiced in the courts of most states is without any sound basis.

The criticisms of this book are the criticisms that may be leveled at psychoanalysis as a diagnostic and therapeutic measure, in addition to those which are frequently leveled at analytic literature. The authors make no mention of treatment failures, provide no statistical account of their experiences, show no concern with relapses and conscious suppression of symptoms. Even those who are most enthusiastic in their endorsement of psychoanalysis are more frequently turning to a greater restraint in their promises than the authors show with respect to this problem. This book is recommended for those who are interested in the analytic approach to the paraphilias and to those who are no longer content with the dated descriptive material of Moll, Kraft-Ebing and Hirschfeld.

Philip S. Bazar, M. D.

Health education and sanatorium treatment are our two greatest weapons in fighting tuberculosis. We must remember that each patient with active tuberculosis presents a medical problem, a social and welfare problem, an economic problem and, let us never forget, a public health problem.—R. D. Thompson, M. D., *Bull. Nat. Tuberc. A.*, Jan. 1950.

The health officer responsible for tuberculosis control in his area should, as an integral part of his work, develop an understanding and working relationship with the social agencies in his community. Such a relationship would certainly benefit both agencies. The social agency will gain an insight into the specialized medical and public health problems associated with tuberculosis control and the health agency will have an opportunity to see the positive contributions which social workers and social agencies can make toward the effective management of tuberculosis patients.—Robt. J. Anderson, *Pub. Health Reports*, Dec. 2, 1949.

More help is needed from tuberculosis specialists and from nutritionists in arriving at scientifically sound and practical minimum standards for relief allowances for the average tuberculosis patient and his family.—Ruth Taylor, *Nat. Tuberc. A. Bull.*, Oct. 1949.

AMERICAN MEDICAL ASSOCIATION NEWS

DEATHS FROM INFLUENZAL MENINGITIS ALMOST ELIMINATED BY DRUGS

A recovery rate from influenzal meningitis of 96 per cent following treatment with sulfadiazine and streptomycin is reported in the June 24th Journal of the American Medical Association.

Before the use of sulfa and antibiotic drugs, the mortality from the disease varied from 90 to 100 per cent, according to Drs. Emanuel Appelbaum and Jack Nelson of the New York City Health Department, authors of the article.

This form of meningitis is essentially a disease of infants and young children, the doctors point out.

Of 90 patients treated, 87 recovered and three died. In the vast majority of these patients, there was marked improvement in six days after treatment with streptomycin was begun, the doctors say.

Residual damage, including deafness and defective vision, occurred in nine of those who survived.

RECOMMENDS EARLY TREATMENT FOR CHILDREN WHO STUTTER

Every preschool child who shows early signs of stuttering should receive immediate treatment, points out Dr. Isaac W. Karlin of the Speech Clinic of the Jewish Hospital of Brooklyn.

Stuttering occurs in about 1 to 2 per cent of the population, Dr. Karlin says in an article in a recent number of the Journal of the American Medical Association.

The condition always begins in early childhood and is approximately four times as common among boys as among girls, he adds.

"A child of about three or four may begin to repeat words or sounds," Dr. Karlin says. "He may show only an occasional slight hesitation in his speech and while speaking may stop suddenly as if groping for a word.

"There are no drugs today for the treatment of stuttering. The treatment is through

the parents. The child's attention should not be drawn to his speech difficulty. In his presence the parents should talk in a simple, easy manner. They should not try to increase or improve his vocabulary. They should notice the situations or circumstances during which he talks best, and these conditions should be encouraged. Conditions under which he stutters more should be discouraged.

"Self reliance should be encouraged, especially in eating and playing. A period of relaxation should be provided every day during which the mother reads to the child in a calm and easy manner.

"A question frequently is posed about the relationship between handedness and stuttering. There would appear to be no reason to believe that there is any. However, every child with a speech disorder should be encouraged to develop his dominant hand, be it left or right."

ONE-DAY AUREOMYCIN TREATMENT FOR GONORRHEA REPORTED

A 98 per cent cure rate in gonorrhea following administration of a one-day treatment with aureomycin, a newer antibiotic drug, is reported by an Augusta (Ga.) research group.

"A series of 100 unselected patients with gonorrhea was arbitrarily divided into two groups of 50 patients each," Drs. Calvin H. Chen and Robert B. Greenblatt and Robert B. Dienst, Ph. D., of the University of Georgia School of Medicine say in the June 24th Journal of the American Medical Association.

"Group A was given aureomycin orally three times daily for two days and group B was given the same daily dose for one day. The results obtained from these two groups were identical. There was one failure in each group. Thus, the percentage of cure was 98 in each group.

"Toxic reactions were few and not serious."

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HYSTERECTOMY

INDICATIONS, TECHNIQUE AND RESULTS

JOHN C. BURCH, M. D.

HORACE T. LAVELY, JR., M. D.

and

ROY W. PARKER, M. D.

Nashville, Tenn.

To come right out with it, this is a paper on selecting cases for hysterectomy, and we hope it will be useful. Some of our conclusions and many of our illustrations are taken from a recent group of 618 hysterectomies. We all know that surgery grows from the basic sciences. Yesterday it was anatomy, bacteriology and pathology; today it is physiology. Operations produce physiologic changes, and the nature of these changes must be determined. While hysterectomy is one of our oldest operations, the changes it causes are still a subject of debate, and this confuses the indications. No wonder many women have the operation when it is not justified, and others are denied it when it is.¹ Because there are so many things to consider there can be no list of indications. Each case is its own law, and every problem must be individualized. It all sounds so simple, but it is in the individualization that we make our mistakes. To do this properly we must first evaluate the patient as a person. Next, we reckon the effect of the disease on life and health and on pelvic function; lastly, we do the same for the operation. We then choose the best for the patient.

Let us start with the patient as a person.

Read before the Association in annual session, Birmingham, April 20, 1950.

1. Miller, N. F.: Am. J. Obst. & Gynec. 51: 804. 1946.

Every woman is different, and there is more to consider than age, economic condition, marital status and gravidity. Even a lay assistant can get us this information. We need a deeper knowledge, and to get it we must know what makes this woman tick. Is she neurotic? Has her urge for reproduction been satisfied? What about her sexual attitude? Is she frigid, or is the sexual act of great importance? Does menstruation have a deep psychologic significance? These are only a few of the things we must know. You get the picture, and, as it develops, the woman begins to emerge and you learn her functional needs. There is an order of value for these needs, and usually at the top in this scale of values is the function of life, in the middle is the general and psychologic health, and at the bottom are the pelvic functions.

Usually, life is the prime consideration. You know hysterectomy is a big operation, and of course some women will die. But as surgery has developed deaths are less frequent. Our own work reflects this trend; in 1930 the death rate from hysterectomy of all types was 4 per cent; by 1940 it had fallen to 2.2 per cent.² In the last 4 years there were 618 hysterectomies of all types with no deaths. This is a good record, but not unusual, and many other surgeons have a like

2. Burch, J. C.; Lavelly, H. T., Jr., & Wallace, D. D.: J. Tennessee M. A. 41: 329, 1948.

one. The operators were the senior author and those training under him. The surgical policy and technique were uniform at all times, and as improvements were made they were adopted by all operators. This series included all types of operative risks. Many were bad; the kind you refer.

Another point to consider is the effect of hysterectomy on life expectancy. We know that under average conditions there will be 3 to 5 deaths for each 1,000 hysterectomies performed.^{3, 4} We also know that 25 of 1,000 Alabama white women 40 years old will eventually die of uterine cancer. So we see that hysterectomy, while not without danger to life, will, in the end, increase life expectancy.

We should consider now the pelvic functions. They are of reproductive, ovarian, menstrual, sexual and supportive nature. For convenience we shall start with reproduction.

The removal of the uterus interrupts the continuity of the genital canal and blocks the upward migration of the spermatozoa. Hence conception is impossible except in those rare cases where the accidental cutting through of a suture creates a fistula between vagina and tube. For practical purposes hysterectomy closes the reproductive era. For some women this is a great tragedy; for others it is a great blessing.

What does the loss of the menstrual function mean? Does its loss affect the ovaries? First, let us see what the scientists say. Many workers have studied the action of the ovary on menstruation with clear cut results. On the other hand, while work on the action of the uterus on the ovary has been plentiful it has not yielded much concrete information. So far, nobody has been able to find a hormone in the uterus. One of our best workers, George Smith,⁵ postulated a menstrual toxin with an action on the pituitary. Of course this would affect ovarian function; however, Smith's work is unconfirmed. Experiments on rats and mice indicate that hysterectomy is followed by certain histologic changes in the ovary. These changes

are definite, but vary according to the species; and their functional significance is unknown. To confuse the picture further, in many of the experiments the changes could have been due to injury to the blood supply. It is a matter of common knowledge that humans and the higher primates suffer no major ill effects from a stopping of their menstruation. Palmer⁶ reports normal determinations of estrogen and pregnanediol excretion after hysterectomy. Pregnanediol, the breakdown product from the corpus luteum, was found to fluctuate cyclically. This, together with normal ovulatory basal body temperature curves, led Palmer to postulate normal ovarian function following hysterectomy in women with normal ovaries before operation. This all shows that ovarian function can be normal after hysterectomy. It does not show that every woman will have a normal ovarian function. We need to know the percentage of the normal and abnormal. Because there is an abnormally high percentage of women with ovarian failure in any hysterectomy series, it is impossible to give an exact statistical answer. It is only natural that some of these will have symptoms after the operation. We never know whether to blame the preexistence of ovarian failure, the removal of the uterus, or disturbance of the ovarian blood supply. When all is said and done we have to rely on clinical impressions since it is so difficult to measure scientifically the effect of hysterectomy on ovarian function. Most present day observers believe that the ovary functions satisfactorily after the operation if the blood supply is normal.⁷

Naturally, the patient wants to know what the operation will do to her sexual function. We can tell her that it will be the same as before operation or improved.⁸ She need not have shortening of the vagina, nor will the removal of the cervix interfere with the act of orgasm or cause a dry vagina. Actually, many of our patients report an improvement in their sexual life. There are several reasons for this. In the first place, many patients have painful intercourse due to their disease or from an irritating cervical discharge, and these troubles are relieved. Then there is freedom from the fear of

3. Phillips, J. H.: *Am. J. Obst. & Gynec.* 50: 174, 1945.

4. Tyrone, C. H.; Collins, C. G.; Weed, J. C. & Zeigler, R. F.: *South. M. J.* 39: 957, 1946.

5. Smith, G. S.: *Am. J. Obst. & Gynec.* 54: 212, 1947.

6. Palmer, A.: *Obst. & Gynec. Surv.* 4: 1, 1949.

7. Reynolds, S. R. M.: *Physiology of the Uterus*, ed. 2, p. 504, Paul B. Hoeber, Inc., 1949.

8. Gaston, E. A.: *Surg., Gynec. & Obst.* 80: 539, 1945.

pregnancy and the bother of contraception. Lastly, there is the hormone-sparing effect of hysterectomy. The uterus is one of the chief users of the ovarian hormones. The operation turns those hormones formerly used by the uterus into the general circulation and this often results in a sense of sexual well being.

In the old arguments of the total versus the subtotal operation, one of the points against the total operation was that the removal of the cervix would damage the support of the vagina and so cause prolapse. However, in many of these patients there are signs of an old relaxation of the vaginal outlet, rectocele, or cystocele; of course they should be repaired at the time of hysterectomy. Although occasionally followed by prolapse, vaginal hysterectomy is ideal for such cases. The anatomists teach us that the uterus and vagina form a continuous tract, and that the removal of the uterus does not impair that portion of the pelvic fascia supporting the vagina, as each segment of the tract has its own support. This explains why we can remove the uterus, its entire supports, and the upper vagina in the radical operation for cancer; yet postoperative prolapse of the remaining vagina is rare. Following abdominal hysterectomy operations, we see more prolapse after the subtotal than the total operation. It is fair to say that total hysterectomy does not predispose to postoperative prolapse unless we fail to fix the associated childbirth injuries.

The how-do-you-do-it of total hysterectomy deserves a few words. In a good operation each step lessens the difficulty of the next; you do this by an attack from above downward on the structures holding the uterus in the pelvis. First, separate any adhesions there may be to the intestines or omentum. Remember Howard Kelly's remark: "It is better to leave a piece of uterus on the bowel than a piece of bowel on the uterus." When there are tough adhesions between the uterus and bowel, cut through the peritoneal surface of the uterus and dissect downward. There is a well-marked plane and the dissection goes easily. You pay particular attention to the junction of the cervix with the corpus. In this location there are frequently tough fibrous bands that prevent the uterus from coming up into the wound. Be sure you separate these

completely, as it simplifies the steps that follow. First, clamp and cut the round and utero-ovarian (or infundibulo-pelvic) ligaments. Next, incise the anterior peritoneum exposing the uterine vessels. Then push the bladder down below the level of the end of the uterosacral ligaments. We delay complete advancement of the bladder until the exposure is better.

The ureters are then located (Fig. 1). This can be done by sliding your index finger down the posterior surface of the broad ligament just above or below the uterosacral ligament. Place your thumb on the anterior surface of the broad ligament, then draw the two fingers along the course of the uterine artery toward the cervix. As your fingers pass over the ureter it will jump. It feels just like the vas deferens felt through the



Fig. 1

scrotum. The uterine vessels are then clamped as low on the cervix as possible. You then cut through the vessels and into the cervical fascia all the way around the cervix except where the bladder is attached in front. This really lets the uterus come up, and at the same time lets the tied uterine vessels fall to the side. You can then clamp the cardinal ligaments inside the ties while the ureter lies outside them. Now cut the uterosacral ligaments and open the rectovaginal space. Then the uterus is held only by the cardinal ligaments and its attachment to the bladder and vagina. By delaying the important bladder dissection to this point you get much better exposure.

The bladder attachment is a well-defined layer of fused vesical and cervical fascia

propria. It is called the supravaginal septum and separates the vesico-vaginal and vesico-cervical spaces. It is easily demonstrated by pulling the bladder toward the symphysis. After the septum is cut, the bladder can easily be dissected off the cervix, and the vesico-vaginal space entered. You then test the adequacy of the dissection by placing the index finger of your right hand in the recto-vaginal space, and the index finger of your left hand in the vesico-vaginal space. By opposing the two fingers you can determine that the rectum and the bladder have been removed from the field of operation. Feeling laterally you outline the attachments of the cardinal ligaments. These are usually clamped in a single bite. The entire clamp should lie as near the cervix as possible and should be inside the tie on the uterine artery. When cutting the cardinal ligaments, the vagina is usually opened in one of the lateral vaults. Aspirate the blood and mucus in the vagina before circumcising the vaginal vault. Bleeding points on the vagi-

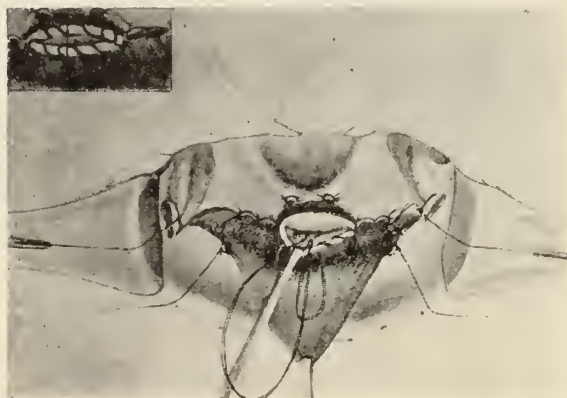


Fig. 2



Fig. 3

nal cuff should be clamped and tied. The cut edge of the vagina is then sewed with a continuous whip stitch; lock every third bite to prevent complete closure (Fig. 2). This leaves the vagina dry but wide open; the anterior and posterior vaginal walls are brought together by a single stitch in the midline. After all bleeding has been controlled, the pelvis is peritonealized. We now make an accurate closure of the peritoneal edges with interrupted cotton sutures rather than the previously used "round the world" type suture (Fig. 3); it permits much more accurate peritonealization and allows the ovaries to remain in the ovarian fossae at the side wall of the pelvis without tension on the ovarian vessels. We feel that this step has 3 definite advantages:

- 1) It puts the operative area entirely out of the peritoneal cavity.
- 2) It leaves the ovaries in their normal position without tension on their blood supply.
- 3) It prevents dyspareunia postoperatively by keeping structures away from the vaginal vault.

A study has been made of 415 total hysterectomies done since January 1946. Of these, 288 were personally performed at Vanderbilt and St. Thomas Hospitals, while 127 were done by the resident staff at Vanderbilt University Hospital.

TABLE 1

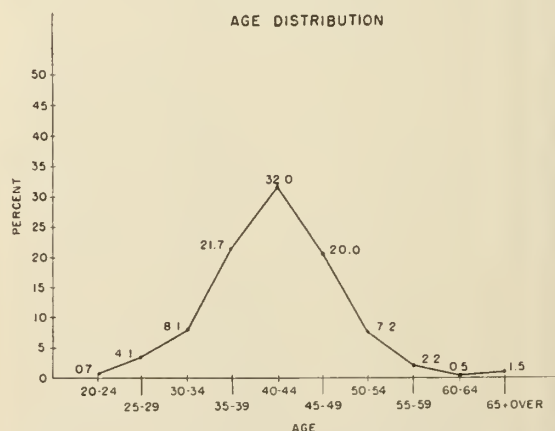


Table 1 shows an age distribution curve. This reveals that 75 per cent were between the ages of 35 and 49.

Tables 2 and 3 are gravidity and parity tables. It is interesting to note that nearly one-third of these women were childless,

and of those who were parous the large per cent had only 1 or 2 children. dence of endometriosis is consistent with that reported by other authors.⁹

TABLE 2

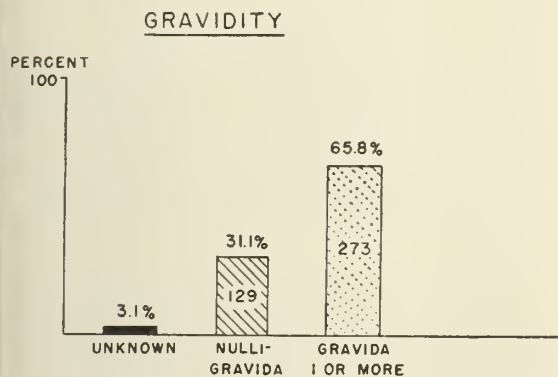


TABLE 3

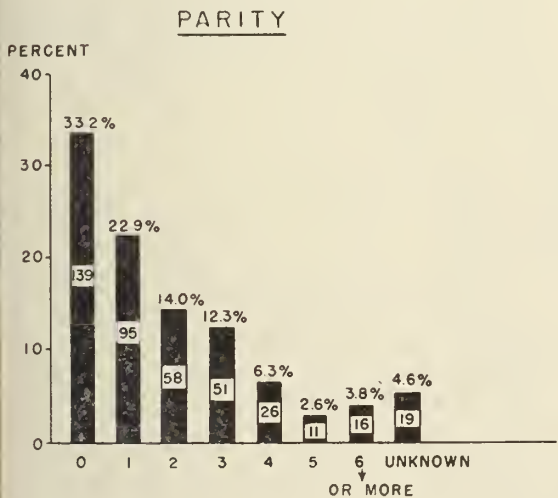


Table 4 shows pertinent data concerning menstrual history: 47 per cent had painful menstruation; 28 per cent had an abnormal length of flow; 31 per cent had an excessive flow; and 28 per cent had an abnormal interval.

TABLE 4

MENSTRUAL HISTORY	NO.	PERCENT
PAINFUL MENSTRUATION	195	47.0
PROLONGED FLOW	118	28.4
EXCESSIVE FLOW	131	31.5
ABNORMAL INTERVAL	119	28.6

Tables 5 and 6 show the incidence of pathologic lesions of the uterus and ovary. It is pertinent to note the number of diseased cervixes present in this series. The inci-

TABLE 5

LESIONS OF UTERUS	NO.	PERCENT
FIBROMYOMA	296	71.3
NON MALIGNANT DISEASE OF CERVIX	261	62.9
ENDOMETRIAL POLYP	33	7.9
CARCINOMA OF ENDOMETRIUM	14	3.3
PRE-INVASIVE CARCINOMA OF CERVIX	3	.7
OTHER LESIONS	49	11.8

TABLE 6

LESIONS OF OVARY	NO.	PERCENT
ENDOMETRIOSIS	53	12.8
NON PROLIFERATIVE CYSTS	43	10.3
PROLIFERATIVE CYSTS	27	6.5
EMBRYONIC RESTS	11	2.6
BENIGN SOLID TUMORS	4	1.0
CARCINOMA	2	.5

Table 7 is a morbidity table. Morbidity was present when the temperature reached 100.4° on any two consecutive days following the first postoperative day. Seventy-five per cent had no morbidity at all.

TABLE 7

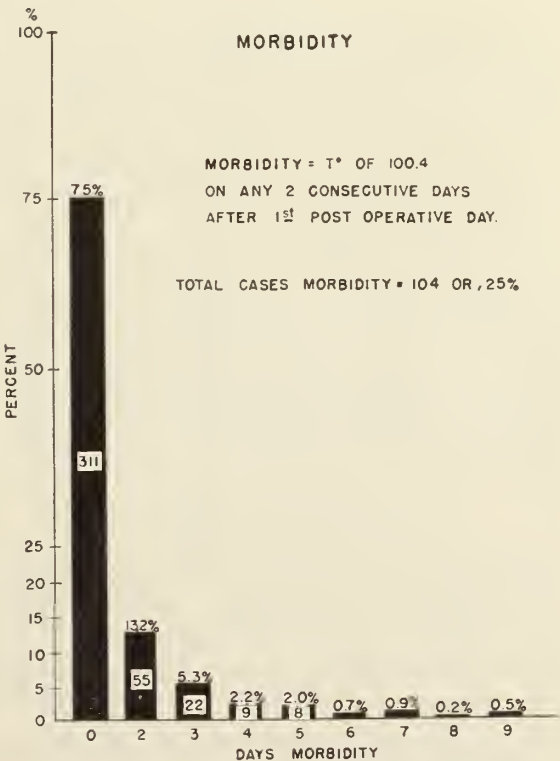


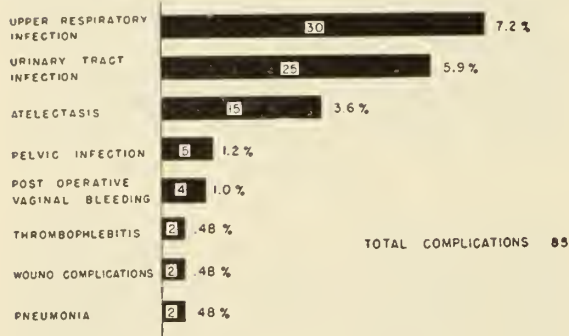
Table 8 shows the postoperative complications. As always, complications involving the respiratory tract were most frequent.

9. Sutter, M. R.: Surgery, 22: 801, 1947.

Urinary tract infections were the next most frequent.

TABLE 8

POST OPERATIVE COMPLICATIONS



There were 4 cases of postoperative bleeding from the vaginal cuff. Two patients had minimal thrombophlebitis. There were two superficial wound infections. There

were no deaths, wound disruptions or pulmonary emboli. All abdominal wounds were closed with interrupted cotton sutures in layers. All cases were ambulated on the first or second postoperative day.

In summary, we feel that hysterectomy must be approached as an individual problem. We have discussed the factors which must be considered. The use of these facts in their proper relationship will help us decide whether any given case should be operated on.

We have presented statistics gathered from 415 total abdominal hysterectomies. The reduction of mortality and serious postoperative complications is striking.

With all these points in mind, it is possible that in the future we may use this operation more wisely, with resulting benefits to both doctor and patient.

FLUID AND ELECTROLYTE THERAPY

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The therapeutic application of fluid and electrolyte replacement suffers from empiricism probably more consistently than any other form of therapeutics. This is not due to the complexity of the problem but to poorly understood and often inadequately presented fundamental physiologic principles. It is with this in mind that I attempt a presentation which offers nothing new and consists only in an aggregation of fundamentals involved in this problem. The subject of fluid and electrolyte therapy is one of extreme importance which can be life saving or afford a fatality, and the margin between these extremes is treacherously narrow.

NORMAL FLUID BALANCE

Approximately 70 per cent of the total body weight is composed of water—water that exists in the intracellular and extracellular spaces. The water in the intracellular space constitutes 50 per cent of the total and the remaining 20 per cent resides in the

extracellular space. Normally, water can pass from one space to another through osmosis, and the osmotic pressure of the intracellular space is dependent upon potassium while sodium governs the osmotic pressure of the extracellular space. It is possible to increase the osmotic pressure in the extracellular space so rapidly with intravenous hypertonic saline (5 per cent sodium chloride) that the fluid so introduced is not recovered. A similar water retention in the tissues is possible with isotonic saline administered over a longer period of time. It is then our first fundamental principle that when attempting to replace or maintain water balance this must be done with water, not salt.

In a normal adult the average fluid intake composed of water taken as such and the fluid content of food plus water of oxidation approximates 2500 cc. The excretory water is comprised of water of vaporization which equals that of urine. The water lost through the bowel is normally seldom more than 100 cc. and thus constitutes a negligible part of this picture. It is obvious then that when water of vaporization is excessive, such as in fever states or during extreme heat, the fluid intake must be increased sufficiently

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so that the waste materials in need of excretion by the kidneys have available fluid to be eliminated. When these fluid requirements are not met to afford sufficient fluid for the urinary excretion of waste products, it is not unusual to observe the azotemia of dehydration. The amount of necessary fluid to affect this waste transfer is dependent upon the potential renal function and the amount of waste material in need of excretion. In health it has been estimated that 35 grams is minimal and this amount of material can be eliminated in 500 cc. of urine provided the kidneys can concentrate urine to a specific gravity ranging between 1.028 and 1.030. Maddock has made the following calculations as to the amount of water needed to excrete 35 grams of waste material:

Renal Status	Maximum Power Concen- tration Sp. Gr.	Minimum Water Require- ment, Cc.
Normal	1.032 - 1.029	483
Diseased, i.e.,	1.028 - 1.026	595
Chronic nephritis,	1.024 - 1.020	605
Pyelonephritis,	1.019 - 1.015	850
Tuberculosis, renal, etc.	1.014 - 1.010	1439

It is obvious from these facts that in determining the patient's fluid requirements that we should give careful consideration to the urinary specific gravity since a variation in this figure may completely change the picture of adequate fluid therapy. For the average surgical patient with adequate renal function the water requirements are usually between 2000 and 3000 cc. daily since the fluid of vaporization and necessary water for urine varies between 1000 and 1500 cc.

It is to be reemphasized that the kind of fluid needed to provide water for vaporization and urine is not saline. Water is to be administered with glucose, and, if one prefers, a salt-free protein hydrolysate may be added for nutritional needs. Whether one uses 5, 10, or 15 per cent glucose depends only upon the desired caloric value. It has been shown by Winslow that hypertonic glucose does not have a dehydrating effect and the per cent of dextrose retained is relative. The deleterious effect of hypertonic dextrose solutions is only that of vein irritation. It has been shown furthermore by Bradbury, Hickey and Hare, Carter and Robins, and Verney that hypertonic glucose

(25 per cent) does not affect diuresis which is contrary to the usual concept.

Another consideration that has been recently reintroduced by Kraushaar, Bradbury, and Wang is that of the antidiuretic effect of morphine and Demerol. This antidiuretic effect is also present with such drugs as phenobarbital, Amytal and pentobarbital but to a much less extent than with morphine. The exact mechanism of anti-diuresis is not clear but that it can be of clinical significance is demonstrated by the behavior of a recent patient. This forty-one year old female with a urinary tract infection, generalized abdominal neoplastic disease, and postradiation nausea was, of necessity, maintained on relatively small but regularly repeated amounts of narcotics. Her urinary output was consistently less than the intravenous fluid administered. The average urine per 24 hours was less than 600 cc. despite a 2000 cc. daily intravenous of 5 per cent glucose in distilled water. This situation continued over a period of 7 days and the appearance of edema was anxiously sought. The patient lost less than 200 cc. in vomitus each 24-hour period during this time. It was felt therefore that some means must be employed to increase her urinary excretion so as to prevent what appeared to be an inevitable edema. The patient was given intravenously 5 per cent dextrose and ethyl alcohol in distilled water. The alcohol partially controlled her pain to the point that morphia was reduced to one or less injection in 12 hours. The fluid intake was at first unaltered, and on the second day after the initiation of this fluid change the patient's urinary output increased to 875 cc. and continued so that by the fourth day the urine volume seemed to stabilize at 1350+ cc. This level of urinary excretion was continued until the alcohol intravenously was discontinued, and the patient promptly required narcotics to control pain and the urinary output fell to less than 700 cc. This entire picture was repeated on two occasions in order to demonstrate its reproducibility. In our experience we have found 5 per cent alcohol intravenously to act as an excellent sedative for the aged (particularly during the early period of post-prostatectomy) and is an apparent mild diuretic with no deleterious effect on renal function. Hodges has shown that

5 per cent alcohol in 5 per cent dextrose has little if any real diuretic effect. This author showed that the urine volume was increased slightly, but glomerular filtration, renal plasma flow and the filtration fraction changed insignificantly. The reabsorption fraction declined to a minimal degree.

In the normal average postoperative surgical patient the salt output per 24 hours varies between 1.5 and 3.0 grams. This salt loss is less than the amount of salt found in 300 cc. of normal physiologic saline, and thus if there is any need for salt it should not exceed the excretion level. I am sure that we have all seen patients receiving vast quantities of normal saline postoperatively when actually the only problem was to maintain a water balance which was actually defeated by saline intravenous therapy. Any excess of Na^+ introduced into the body is maintained in the extracellular space and thus increases the osmotic pressure so as to effect tissue edema rapidly and so the available water is actually not available to the kidneys. Lyon, Stanton, Freis and Smithwick, in measuring extracellular fluid in postoperative patients, found that in the average hydrated patient the extracellular fluid increased from 6 to 26 per cent, and the latter figure was obtained in a patient receiving 1500 cc. of normal saline and an equal amount of 5 per cent dextrose in water the first postoperative day. Coller, Campbell, Vaughan, Iob and Moyer in their study of salt intolerance found it ill advised during the first two postoperative days unless there was some abnormal salt loss during that time. Moyer has pointed out that in upper abdominal surgical procedures that the incidence of pulmonary complications was higher in the aged when maintenance doses of salt were infused than when no salt was used except upon specific indication. Saline infusions are not innocuous and, as Schemm has pointed out, "brine" is not water.

DEHYDRATION AND ELECTROLYTE IMBALANCE

Dehydration is generally not only a negative water balance but most often a problem in electrolyte imbalance since clinically most patients in this group have become dehydrated from gastro-intestinal losses. Clinical manifestations of dehydration are striking with a loss of fluid equal to 6 per cent of the body weight. It is seen then that even relatively small fluid losses can afford seri-

ous bodily dysfunction and thus fluid and electrolyte therapy must assume a prominent and important place in clinical medicine with exacting therapeutic demands.

Symptomatically, patients suffering with dehydration may be divided into two groups: (1) those suffering primarily with water deficiency and (2) those in whom the primary disturbance is electrolyte imbalance. Subjectively, patients in the first group are characterized by thirst and objectively by signs of water loss; while those in the group suffering primarily with electrolyte loss suffer principally with circulatory disturbance and collapse. Patients in the latter group, suffering from electrolyte imbalance and fluid loss, progressively show apathy, weakness, somnolence, anorexia, nausea, and variable degrees of systolic blood pressure fall. When the dehydration reaches severe proportions, the patients experience a marked fall in blood pressure to shock levels. At this stage the plasma protein and hematocrit demonstrate an increase in contradistinction to the electrolyte decrease. The urinary output is low and azotemia may be evident. The severity of the above subjective and objective findings vary directly with the rapidity of development and the age of the patient.

Renal dysfunction during and after severe dehydration is seldom appreciated. This disturbance to renal function is due to several factors. The reduced blood plasma volume is associated with a reduced arterial pressure which, in turn, reduces the filtration pressure through the kidneys. The increased viscosity of the blood further reduces the blood flow through the kidneys. Intrinsic renal dysfunction previously present or associated with severe dehydration may affect the excretory and absorptive functions of the kidney to further influence fluid and electrolyte economy. Gamble has mentioned the inability of the kidney to excrete such substances as phosphates and sulfates and probably organic acid radicals and the opposite, failure of reabsorption. In this latter respect sodium and chloride ions may be lost in the urine in spite of the fact that these ions are diminished in the plasma (recovery stage of lower nephron nephrosis). Another factor in reducing renal load is the use of dextrose to afford needed calories to reduce protein loss and prevent keto-

sis which relieves the potentially inadequate kidneys of having to excrete organic acids.

What then is the practical clinical approach to the problem of treating dehydration? It is essential, first, to consider the history with particular attention as to the mode of onset, duration, fluid volume lost, degree of thirst, and ability of oral fluid retention. The physical examination is directed to determine the degree of dehydration (dryness of the tongue, inelasticity of the skin, appearance of the eyes) and the presence or absence of edema. Laboratory studies should include the volume and specific gravity of the last urine. The blood studies should include erythrocyte count, hematocrit level, non-protein nitrogen, total plasma protein, carbon dioxide combining power and plasma chloride. Blood sodium and potassium values along with a pH of the blood would be of assistance but these values are usually not available except in large hospitals or research centers.

It is to be pointed out that it is impossible to estimate exact amounts of fluid and electrolytes for any individual situation and one must be guided by the change in the clinical appearance of the patient, and a repetition of the blood studies is often an aid in planning future fluid and electrolyte therapy. The various laboratory tests will be discussed individually with especial reference to this problem. The reader is to be reminded that, in the last analysis, success in these patients is dependent upon an adequate renal function to assist in eliminating the electrolyte and waste excesses. Though complete reliance cannot be placed on the kidney, it certainly compensates for any electrolyte excess that may be introduced.

The number of erythrocytes in conjunction with the hematocrit level will demonstrate the degree of hemoconcentration and similarly an estimation of dehydration. The normal hematocrit in the male is 40-54 per cent and in the female 37-47 per cent. A repetition of the above blood studies will afford an excellent and simple method of determining the degree of hydration that is being accomplished.

Plasma proteins when abnormally low influence the extravascular retention of fluids. The fluid retention may occur generally in the interstitial tissue or locally at the site of operation or injury. Moore and

Van Slyke have stated that total plasma proteins of 5.5 gm. per 100 cc. constitute the critical level at which fluid can be retained. If the plasma proteins are below 5.5 gm. per 100 cc., replacement must be considered, but it must be realized that the use of plasma indiscriminately is ill advised since the contained chloride may introduce a detrimental factor. The salt free plasma is the therapeutic agent of choice.

The estimation of the plasma chloride level is particularly valuable in patients who have lost appreciable quantities of fluids from the gastro-intestinal tract. Normal values for plasma chloride when expressed as sodium chloride is 560 mg. per 100 cc., as chloride 365 mg. per 100 cc., or 103 milliequivalents per liter. When chloride is lost it is replaced by the bicarbonate radical to maintain ionic equilibrium among the acid radicals. Plasma chloride loss is an indication of extracellular fluid loss. Plasma chloride depletion may be an indication that some other part of the body is removing the chloride and thus a lowered plasma chloride in the absence of vomiting or gastro-intestinal fluid loss should be eyed with suspicion. In such instances as ascites the plasma chloride level will remain depressed since the chloride is transferred to the ascitic fluid, and as more chloride is given the ascites is increased. Another instance is that of disturbed renal function during severe dehydration in which the kidney continues to fail to reabsorb the chloride, and thus, in spite of chloride administration, the plasma chloride remains abnormally low. In the early recovery phase of lower nephron nephrosis the chloride loss may assume alarming proportions, and if not replaced with equal rapidity the loss may result in a fatality.

Individuals seriously or chronically ill may maintain slightly depressed chloride levels (500 mg. per 100 cc. of plasma). In this regard and whenever chloride therapy is employed it must be recalled that if an excess of chloride is given it does not produce an abnormally high plasma chloride value, but rather the excess chloride passes directly into the tissues to produce hyperhydration and edema. It is for this reason that the promiscuous use of sodium chloride parenterally must be condemned.

The non-protein nitrogen level in the blood is of value in estimating not only the

degree of dehydration but may be an important clue as to the renal dysfunction as the process of combating dehydration is undertaken. Another factor that must be constantly kept in mind is the elevated non-protein nitrogen level of the blood due to extrarenal causes (protein destruction, gastro-intestinal bleeding) which may materially influence parenteral therapy.

The value of potassium studies is assuming ever increasing importance. The excellent work of Govan and Darrow in reducing the mortality rate of infants with diarrhea from 32 per cent to 6 per cent by the use of potassium chloride, along with sodium chloride, sodium lactate and dextrose, is an example of the significance of potassium loss.

Potassium is lost during the prolonged periods of vomiting or by measures designed to relieve vomiting or gastro-intestinal distention (Levine or Miller-Abbott drainage). Austin and Gamman have shown that gastric juice contains two and one-half times as much potassium as does the blood serum and Falconer has found vomitus to contain five times that of serum. In addition to the above means of potassium loss, dextrose tends to wash out additional potassium.

The recognition of potassium deficiency depends upon the recognition of conditions that may produce hypopotassemia and this state is characterized by certain electrocardiographic changes which return to normal upon potassium replacement. Subjectively, these patients appear to be extremely ill and complain of severe muscle weakness or asthenia. The blood pressure is often low, with a disproportionately low diastolic pressure. During potassium therapy the systolic arterial tension may rise 30 to 40 mm. of Hg., and diastolic pressure may be increased even more than the systolic pressure.

The significant electrocardiographic changes in hypopotassemia are a lengthening of the Q-T interval, depression of the S-T segment, and possibly an inversion of the T wave. As the potassium level is raised to normal these electrocardiographic changes disappear and it is well to use this index during potassium administration. Bellet, Nadler, Gazes and Lanning employ a 1.14 (isotonic) per cent solution of potassium chloride in quantities varying from 100 to 700 cc. combined with sodium bicarbonate, sodium chloride and dextrose to avoid potas-

sium intoxication and combat the associated acidosis.

The consideration of serum potassium deficits in clinical medicine is a recent advance and it is obvious that this correction may in some instances be a life-saving measure.

Generally we are accustomed to consider values of the carbon dioxide combining power of the plasma to indicate unequivocally acidosis or alkalosis. (Normal, 55 to 65 volumes per cent.) On the other hand, if one considers the formula

$$\text{pH} = \text{pK} + \log \frac{\text{B.HCO}_3}{\text{H.HCO}_3}$$

it can be readily seen that one is measuring only one of three variables: pH, B.HCO₃ and H.HCO₃. In determining the carbon dioxide combining power of the blood the amount of H.HCO₃ in the blood is measured. Thus it is possible that the carbon dioxide combining power of the blood may not indicate a true acidosis or alkalosis. In uncomplicated gastro-intestinal fluid loss, nephritis or diabetes mellitus the carbon dioxide combining power of the blood indicates a true acidosis or alkalosis. However, when these conditions are associated with respiratory disturbances the carbon dioxide combining power of the blood may not indicate the true pH of the blood. In instances of hyperventilation the H.HCO₃ of the blood may be sufficiently depressed to produce an alkalosis and this situation has been recorded in instances of encephalitis, hysteria and febrile states. Hypoventilation with a resultant carbonic acid excess and acidosis is sometimes seen in emphysema, asthma and opiate poisoning with marked respiratory depression. This potential paradox is worthy of consideration whenever therapy of acidosis or alkalosis is considered. This possible source of error could be avoided by determining blood pH rather than carbon dioxide combining power, but blood pH determinations are not generally available in hospital laboratories.

PARENTERAL FLUIDS AND THEIR INDICATIONS

The governing factor in parenteral fluid therapy is that the content of the fluid be such as to replace or supply the substance or substances that are lacking or are lost to the patient. The specific need of the patient

governs the choice and amount of parenteral medication.

Dextrose Solutions

Dextrose solutions supply water and calories depending upon the percentage of dextrose used. The caloric value of a 10 per cent solution of dextrose is less than one-half that necessary for a patient at complete rest, but its chief value is to spare protein catabolism and the avoidance of ketonic acid formation (Maddock). Dextrose solutions are valuable as additional supportive measures when combined with electrolytes, plasma or blood in the treatment of shock. Wilson has advocated the use of 10 per cent solutions of dextrose rather than the usual 5 per cent concentration because of the greater retained carbohydrate and caloric value. It is to be emphasized that dextrose solutions are of no value in replacing electrolyte losses, and instances of collapse and shock are not uncommon where electrolytes are lost in large quantities (vomiting, prolonged gastric suction) and replacement is limited to dextrose solutions in water.

Protein Hydrolysate Solutions

These solutions afford the patient protein, dextrose and water, and some hydrolysates have available 2 gm. of salt per liter. It is important to determine the presence of sodium chloride in the hydrolysate used. We have used only the salt free preparations and have limited our use of hydrolysates to patients that demonstrate a marked malnutrition preoperatively or instances in which postoperative eating has been delayed.

Sodium Chloride Solutions

We have limited our use of isotonic sodium chloride solutions (9.0 grams per liter) to volumetric replacement of gastro-intestinal fluid aspirated or to replace the loss due to vomiting. Isotonic solution is not used as a means of maintaining a normal sodium chloride blood content in instances in which parenteral fluids are necessary for prolonged periods. Since the daily salt loss varies normally from 2 to 5 per cent, we have found that 500 cc. of isotonic sodium chloride solution administered every other day serves adequately to maintain the sodium chloride blood level.

Coller, Campbell, Vaughan, Iob and Moyer have advocated hypotonic sodium chloride solutions because of the intolerance to salt following general anesthesia. Sodium chlo-

ride (0.38 per cent) plus 0.11 per cent sodium bicarbonate is recommended as the ideal anesthesia and postoperatively. We have not had experience with this solution.

SOLUTIONS FOR THE TREATMENT OF ACIDOSIS

Lactated Ringer's Solution

This solution is valuable in instances of mild acidosis or potential acidosis. After the lactate is metabolized this solution leaves an excess of sodium. This solution can be given in large quantities where an attempt is made to combat acidosis and at the same time provide adequate fluid.

Sodium Lactate Solution

Molar solution of sodium lactate is diluted to one-sixth molar concentrations with water or physiologic saline. The dosage can be calculated by the formula that is given in the following paragraph for "Sodium Bicarbonate Solution." It is to be remembered that sodium lactate or lactated Ringer's solution should not be used in severe hepatic disease since the function of these solutions is dependent upon the liver to effect a split and thus free the sodium for the treatment of acidosis.

Sodium Bicarbonate Solution

A 1.3 per cent solution of sodium bicarbonate solution is isotonic. Ampoules of sterile sodium bicarbonate are available so that when diluted in a liter of water an isotonic solution results.

Hartmann and Senn have employed the following equation in calculating the amount of sodium bicarbonate necessary in various degrees of acidosis:

$$\text{mM} = \frac{(60 - \text{CO}_2) 0.7 W}{2.24}$$

mM = millimols of sodium bicarbonate or sodium lactate

1 mM = 0.084 gm. sodium bicarbonate or 1 cc. molar sodium lactate

CO₂ = serum carbon dioxide in volumes per cent.

W = body weight in kilograms

Darrow states that when the plasma carbon dioxide is not known that 0.4 gm. of sodium bicarbonate per kilogram of body weight can be given in severe acidosis. Moyer suggests that a 1.3 per cent solution of sodium bicarbonate may be given intravenously until the hyperpnea and dyspnea are relieved.

This amount of solution usually does not exceed two liters.

SOLUTIONS FOR THE TREATMENT OF ALKALOSIS

Physiological Saline

Physiological saline is valuable in the treatment of mild alkalosis.

Hydrochloric Acid

In alkalosis with a carbon dioxide combining power of more than 90 volumes per cent of serum, Cullen has advocated the use of hydrochloric acid. The following formula is used to determine the amount of hydrochloric acid that is needed:

$$\begin{aligned} \text{cc. of HCl} &= \text{CO}_2 \text{ excess of } 70 \times 0.028 \times W \\ \text{HCl} &= \text{concentrated HCl or 36 per cent} \\ \text{CO}_2 &= \text{plasma carbon dioxide combining power in volumes per cent} \\ W &= \text{body weight in kilograms} \end{aligned}$$

The amount of hydrochloric acid used should never exceed 5 cc. per 100 cc. of saline. The solution is given intravenously at a slow rate and discontinued if dyspnea appears. Moyer has suggested, if carbon dioxide combining power determinations of the plasma are not available, that one-hundredth molar solution of hydrochloric acid may be given until carpopedal spasm and hypopnea disappear.

Ammonium Chloride

Moyer has used 0.9 per cent solution of ammonium chloride in treating alkalosis as an emergency when serum carbon dioxide combining power studies were not available. It is suggested that the above solution be given until relief is obtained from carpopedal spasm and hypopnea.

Zintel, Rhoads and Ravdin have employed a 2 per cent solution of ammonium chloride in 0.9 per cent sodium chloride solution. These authors noted that this combination lowered the carbon dioxide combining power of the serum at the rate of 1 volume per cent for each gram of ammonium chloride given.

CONCLUSION

A brief review of intravenous fluid therapy has been undertaken with the specific attempt to present a simple and practical approach to the problem. The necessity of employing parenteral therapy specifically to replace materials lost in the extracellular and intracellular compartments of the body is emphasized. The problem of parenteral

fluid therapy has as yet not been conquered, but its intelligent application has been responsible for the saving of lives, much as the abuse or misuse of modern parenteral therapy can account for a death.

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THE DIAGNOSIS AND MANAGEMENT OF SUBDURAL HEMATOMA IN INFANTS

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A high morbidity may result from subdural hematoma in infants. The prevention of mental retardation, blindness, convulsions, hemiplegia and other sequelae of cerebral dysfunction due to subdural hematoma can be accomplished only by early diagnosis. It cannot be too strongly stressed that successful surgical management will prove of little avail if the pathologic process goes unrecognized until irreversible neurologic and psychologic changes have occurred.

The pathologic physiology of the lesion in children is quite different from that commonly encountered in adults in whom the full growth of the cranium and its contents has been achieved. For this reason, the clinical picture and management in infants bears little resemblance to that in adults. Characteristically, the adult complains of increasing headache, drowsiness and mental confusion, with or without neurologic dysfunction. This syndrome is now sufficiently well known to suggest at once the diagnosis of chronic subdural hematoma. Gratifying results are usually accomplished in such cases by simple drainage of the subdural accumulation through bilateral parietal burr holes. The problem in infants and small children, however, is not so simple.

There is no clinical picture absolutely pathognomonic of subdural hematoma in infancy. There are, however, commonly

occurring symptoms and signs which should arouse suspicion that this lesion is present. One of the most frequent is *convulsions*. The convulsion may be focal in character (i.e., limited to one side or one extremity) or it may be generalized. It may be mild, consisting in a simple staring attack, or it may be severe and generalized, attended by violent motor discharges, respiratory embarrassment and sphincteric incontinence. There is no feature of the seizure which enables the examiner to distinguish it from seizures due to other etiologic factors.

Vomiting is a second common symptom. It presents a very special problem in the very young infant and must be differentiated from the vomiting seen in hypertrophy of the pylorus. It may be the first and for some time the only symptom of subdural hematoma. The emesis may or may not be forceful in character. The prevalent notion that cerebrogenic vomiting is characteristically projectile is not a reliable maxim. The possibility of the presence of subdural hematoma should be entertained in all cases of unexplained vomiting in the infant.

Other frequently encountered symptoms include *hyperirritability* and/or *sluggish response* to stimuli.

A frequent triad seen in the neonatal period includes (1) failure to do well, as evidenced by hyperirritability, feeding difficulties and fluctuating temperature; (2) rapid enlargement of the head; and (3) a

history of a difficult birth or labor. When this combination of symptoms presents in an infant during the first or second month, the presence of subdural hematoma should be suspected and appropriate diagnostic measures instituted.

The most common objective findings consist of temperature variation (hyperthermia is more often demonstrated than subnormal temperature), hyperactive reflexes, bulging fontanels, enlargement of the head, and paralysis in the form of facial palsy or hemiplegia. Many infants with subdural hematoma have infection elsewhere in the body (otitis, pneumonitis, etc.) which may appear to account for the fever and for some time mislead the examiner.

Not infrequently, the infant with a subdural hematoma makes satisfactory progress in the early months of life. The first sign may consist of enlargement of the head. Recently, a mother brought a 7-months-old child to a pediatrician for the sole reason that while buying a bonnet she was told by the clerk that the infant's head was much larger than the average baby's. Subsequent investigation disclosed a bilateral subdural hematoma.

The enlarged head in subdural hematoma cannot be distinguished on clinical grounds from the early stages of hydrocephalus secondary to an obstruction of the cerebrospinal fluid circulation. It has been stated that in chronic subdural hematoma the enlargement is chiefly in the biparietal diameter, whereas in the hydrocephalic there is a more marked increase in the fronto-occipital axis. Unfortunately, this simple dictum cannot be relied upon to differentiate between the two conditions. The shape of the head is determined much less by the character of the lesion than by the position in which the infant lies. Because subdural hematoma so closely simulates hydrocephalus, *all cases of abnormal enlargement of the head should be carefully investigated.*

Other physical signs of subdural hematoma include those associated with increased intracranial pressure in infants—separation of the sutures, "cracked pot" percussion note, increase in the size of fontanels, and bulging of the anterior fontanel—regardless of the etiology. Papilledema is not usually seen because the separation of the sutures affords a degree of decompression. It should

be stressed that *frequently the clinical picture is simply that of an infant appearing acutely or chronically ill who may have an abnormal temperature and appear malnourished.*

Laboratory studies are of little value in the differential diagnosis of infantile subdural hematoma. Routine blood studies usually disclose nothing more than secondary anemia. X-rays usually show some separation of the suture lines. Occasionally a fracture line will be demonstrated, indicating previously incurred trauma.

The presence of a subdural hematoma can most easily be established by diagnostic puncture of the subdural space. The lesion must be suspected and actively sought, since frequently there is no other indication for doing subdural punctures. By resorting to this relatively simple procedure, the diagnostic issue can often be settled. If a subdural hematoma is encountered, treatment can be started immediately.

The causes of subdural hematoma are still imperfectly understood. Trauma is undoubtedly the responsible factor in the majority of cases. This may be incidental to prolonged and difficult labor, terminated with or without forceps. It may arise from injury to a baby's head by attendants or by falls. A history of trauma may never be elicited. Hemorrhagic diatheses, e.g., those secondary to prothrombin deficiency and scurvy, have been listed as possible causes. It is also conceivable that in progressive degenerative disease of the brain, shrinking and retraction of the cortex ensue, the result of which is that the brain no longer contacts the inner surface of the dura and the veins are subject to stretching and rupture.

Stretching and rupture of the pial veins which extend from the cortex to the lacunar spaces of the superior longitudinal sinus has been generally accepted as a source of hemorrhage. Certainly, the location and form of many clots are consistent with such an origin. The clot frequently extends from the posterior parietal region well forward over the frontal pole and from the longitudinal sinus superiorly to the floor of the middle fossa inferiorly. Subdural bleeding is frequently bilateral, although it is almost always more severe on one side than on the other.

The behavior of the hemorrhagic collection in the subdural space does not follow that seen in other parts of the body. The pathologic responses involved in the formation of subdural hematoma are in many respects unusual and thus far have not been satisfactorily explained. Following a hemorrhage into the subdural space, fibroblasts grow in profusion from the under surface of the dura and begin to invade the clot. Histiocytes containing blood pigments may be seen. As resorption of the clot proceeds the xanthochromic high-protein fluid remains. The fibroblasts proliferate. On the outer face of the clot, that is, that immediately under the dura, the cells arrange themselves in parallel fashion, giving rise to a definite membrane which becomes densely vascularized and thickened, ultimately assuming the appearance of a well developed structure adherent to, but separable from, the dura. This is the so-called "outer membrane." A similar process develops on that portion of the clot facing the arachnoid and leads to the formation of a thin "inner membrane." As a rule, the outer membrane varies from 1 to 4 mm. in thickness and is tough, inelastic, shiny, gray, and vascularized. The inner membrane is much more filmy and transparent. At the periphery of the clot the outer and inner membranes fuse, encapsulating the remainder of the clot. The degree of adherence between the arachnoid and inner membrane is seldom as great as that seen between the dura and the outer membrane. It is now well established that the quantity of fluid within such a sac may increase without further bleeding. This is due to an accession of tissue fluid drawn into the hematoma through the semipermeable membrane of the arachnoid as a result of the high osmotic tension of the altered blood proteins within the sac. The contents of the hematoma sac vary widely from case to case. The fluid may be colorless and clear, or may be deeply xanthochromic and contain flecks of solid clot. Under the former circumstance, the diagnosis of a subdural hygroma is made. There is probably little doubt that such a pathologic entity exists; yet, in many such cases, careful examination of the membrane will reveal histiocytes filled with old blood pigment—evidence of previous bleeding. The arachnoid

underlying the clot may be somewhat thickened and translucent and there may be atrophy of the convolutions.

In most adult cases the simple evacuation of the liquid clot by means of suction and irrigation through bilateral burr holes has been sufficient to relieve symptoms. The relief of pressure and reexpansion of the brain are the important factors. Only occasionally is it necessary to perform a craniotomy and remove the membrane.

The problem is quite different in an infant. During the first three months of life the brain volume is doubled, and in the next six months it is doubled again. Because of this, a fundamental difference in the surgical management must be stressed. The hematoma membrane, though thin, is an inelastic structure similar to scar tissue elsewhere in the body. As a result of this inelasticity, the rapid expansion of the brain which is taking place during this period is restricted and the development of cortical function is impaired. Other more subtle influences on the cortical blood supply and absorption of the spinal fluid may also ensue. It becomes quite evident that in an infant the subdural membranes must be removed or at least widely decompressed if normal development and function of the cerebral cortex are to be preserved.

Clinical experience indicates that infants do not tolerate well sudden decompression of the subdural collection, whether by operative intervention or by needle aspiration. The result of rapid decompression is a marked alteration of the intracranial hydrodynamic equilibrium. This may lead to a fatal acute cerebral edema. The hematoma must nevertheless be evacuated because it commonly leads to repeated vomiting, dehydration, malnutrition and anemia and because its ultimate action is to produce irreversible neurologic and psychologic disabilities. The compromise is accomplished by "fractionating" the decompressive process, i.e., removing between 10 and 15 cc. on successive days until the infant's general condition is sufficiently improved to permit a more radical attack. It is thus possible to serve both diagnostic and therapeutic ends in the initial subdural tap.

The technic of performing intracranial subdural puncture is relatively simple but, inasmuch as the subdural fluid constitutes

an excellent culture medium, insistence on strict asepsis is required. The technic of performing a subdural tap will now be described.

The hair is shaved anterior to a line extending between the ears. The infant is "mummified" in a sheet and a nurse secures the child's head between her palms, keeping the face uppermost. The field is prepared as for any operative procedure and the area isolated with sterile towels. By palpation through a layer of sterile gauze, the site for the proposed puncture is selected in the frontal suture line beyond the lateral margins of the anterior fontanels. One per cent novocaine is used to make a wheal in the skin. A #19 or #20 short bevel lumbar puncture needle approximately 2 inches in length and equipped with a stylet is inserted through the novocaine wheal at right angles to the scalp. The hub of the needle is then brought down firmly at a 60° angle with the skin. A definite resistance is offered by the dura mater. The latter structure is penetrated. Under normal circumstances only a few drops of clear fluid is obtained. More than this should be regarded as pathologic, although it may still have no clinical significance. The subdural space is a potential space somewhat akin to the pleural space and if there is a collection of fluid it will usually be under some pressure and will flow readily through the needle. It may be necessary to wait a moment or two and to adjust the needle by rotating it in order to start the flow. A syringe is then attached to the needle and the fluid allowed to accumulate in the syringe. Active aspiration is contraindicated for the reason that fresh bleeding sometimes results from the negative pressure. Care should be taken not to advance the needle too deeply as it may puncture the cortex and provoke bleeding from the cortical vessels.

Subdural taps are customarily done on both sides at the first procedure. Approximately 10 to 15 cc. of fluid should be removed from each side. The fluid may be grossly bloody but it will not clot on standing. The supernatant fluid will be xanthochromic and if tested will exhibit an elevated total protein. Once the diagnosis of uni- or bilateral subdural hematoma is confirmed by the diagnostic tap, subsequent taps are routinely

carried out daily on alternate sides, removing not more than a total of 15 cc. at each time. Culture of the fluid should be carried out two to three days. An injection of 10,000 units of penicillin diluted in 2 cc. of saline into the subdural space every two days may be done as prophylaxis against infection. A sterile gauze dressing should be kept over the site of puncture at all times. A flexible collodion covering of the puncture site is not recommended where repeated punctures are contemplated. It is advisable to change the site of the skin puncture frequently in order not to produce a devitalized track. As subsequent taps are carried out, the fluid usually becomes clearer and its protein content diminishes.

Daily taps are carried on for approximately a week or ten days, gradual decompression of the subdural space being thus achieved. While this is being accomplished, attention is given to the general condition of the infant. Transfusions are given as indicated for the anemia, and intravenous fluids are employed to permit adequate hydration of the infant. It should be stressed that where a later craniotomy is contemplated, scalp veins should be avoided in giving intravenous therapy. At the end of one or two weeks, the infant is usually more alert and better hydrated. He is accordingly better able to stand the rigors of cerebral surgery.

In some cases in which the diagnosis has been made very early in the course of the disease, repeated aspirations have been so successful in withdrawing the fluid that the process of membrane formation was not in evidence. However, the presence or absence of a neomembrane cannot be established by anything short of direct vision. In many clinics bilateral trepanation is carried out in the temporal region for the express purpose of establishing the presence or absence of a membrane. Then, at a later date, craniotomy is carried out. It has been our policy to outline a medium sized fronto-temporo-parietal osteoplastic flap and make a single burr hole. If a membrane is demonstrated, additional burr holes are made as necessary and the osteoplastic flap is elevated and the membrane removed. Before starting such a procedure, however, a cannula should be tied into a suitable vein, usually the internal saphenous at the ankle, and a blood

transfusion should be available. We prefer to give whole blood rather than any of the dilute mixtures to these infants. Usually a single transfusion of 10 cc. of blood per pound of body weight is sufficient.

The operation is usually carried out under $\frac{1}{2}$ per cent novocaine local infiltration anesthesia. Intravenous sodium pentobarbital has been given recently in some cases in doses to allow light slumber and to maintain the position of the infant more easily. The osteoplastic flap is elevated in the routine manner. It is often possible to cut the bone between the burr holes with stout scissors and thus save considerable time. The dura is incised in a horseshoe fashion and when elevated reveals the outer membrane of the hematoma usually extending across the entire exposed field. It is frequently possible to reflect the dura from the outer membrane but on some occasions it is easier to resect the membrane by blunt separation from the dura after both the dura and membrane have been elevated together. It is not necessary to remove the membrane in its entirety as it is usually not technically feasible. Careful attempt to remove the membrane from the frontal lobe and the motor strip, however, is thought to be advisable. The inner membrane should be removed as carefully and as thoroughly as possible throughout the limits of the exposure. Occasionally, the membrane may be densely adherent to the cortex and it is probably wiser to leave small islands of it behind rather than risk damage to the cortex. It should be pointed out that it is important to break up the continuity of the membrane as completely as possible rather than to stress the fact that it should be entirely removed. The dura is closed and the bone flap is replaced and held in position with several silk sutures passed through the margins. The scalp flap is closed tightly in layers in the usual manner. The head dressings must not be tight, as pressure necrosis of the scalp over the frontal and occipital prominences is very quick to develop.

If, after a period of seven to ten days, the baby's general condition is satisfactory, a similar procedure is carried out on the opposite side. It is usually necessary to combat dehydration rather carefully for the first several days. Formula feedings are instituted as tolerated.

It will thus be seen that this requires a prolonged course of hospitalization: approximately a week to two weeks of gradual decompression; another week for the first stage of craniotomy and another week to ten days for the second stage craniotomy; making a total of four to six weeks. However, the results are most gratifying when the diagnosis is made early and most unsatisfactory when diagnosis and treatment are delayed. A plea is therefore made for the suspicion and early recognition of this fairly common lesion in infancy.

Burns—In the two station hospitals in which I worked during World War II, the treatment of burns consisted of analgesia with morphine and atropine, followed by the meticulous scrubbing of the burn area with white soap and sterile saline under aseptic technic. Following the scrubbing a complete change of sterile drapes, gown and gloves was accomplished and the burn was covered with a single layer of sterile, plain vaseline gauze in accurate apposition to the burn surface and covered by multiple layers of sterile gauze dressings which, in turn, were held in place by roller bandage followed with ACE bandages. The bandage was applied gently but with firm pressure. Where fingers or toes were involved they were dressed separately and bandaged in full extension. A cast was applied if deemed necessary. Postoperatively a close check was maintained on the blood chemistry, intake and output. Daily hematocrit, blood counts, plasma, protein and urinalyses were obtained. A urinary output of 1500 cc/24 hours was striven for. After insuring adequate intake and output of fluids, sulfadiazine or sulfathiazole was given orally and blood concentration tests for sulfa requested every other day with daily urinalyses. Multiple layers of sterile gauze were preferred by me to sterile mechanics' waste due to the greater smoothness of the resulting bandage.

In cases where anesthesia was necessary pentothal sodium by vein was the agent of choice. Particularly would this seem true in patients burned about the face or with laryngeal injury. Furthermore, pentothal sodium is less prone to produce circulatory complications and less likely to contribute to postoperative blood and hemoglobin concentration. The complication most feared was severe laryngeal spasm, which has never befallen me, and which should be avoided by the use of atropine instead of scopolamine and by use of an airway.—*Bowman, J. M. A. Georgia, July '50.*

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ANTIHISTAMINES AND COLDS

"In view of the favorable reports concerning the use of antihistaminic drugs in treatment of the common cold and in view of the recent release of these agents to the public without medical prescription, with the prompt appearance of an onslaught of full page newspaper advertisements and radio announcements, it seemed advisable under controlled conditions to confirm the efficacy of orally administered antihistaminic drugs in the treatment of the common cold and also to test the effect of such a drug given intranasally. For these reasons we decided to administer tripeleennamine hydrochloride (pyribenzamine hydrochloride) orally and by nebulizer and chlorothen (tagathen) citrate . . . orally. In addition, inert tablets resembling tripeleennamine and an inert solution in nebulizers similar to the tripeleennamine-containing nebulizers were used as controls.

"Any form of treatment for the common head cold is influenced by so many factors that only a rigidly controlled study eliminating as many variables as possible will provide results on which relatively valid conclusions can be based. Some of the variables are: suggestibility of patients and also their physicians; fluctuation of a person's degree of immunity; difficulty of objective diag-

nosis of a head cold; unreliability of subjective impressions of a developing head cold until clearcut symptoms such as 'sniffles' occur, and even then the patient may have some other disease, such as hydrorrhea due to vasomotor rhinitis; the variable course of a head cold; the difficulty of follow-up examinations in a relatively trivial, spontaneously curable and self-limited disease, and variations in age and general health of patients."

Thus do Hoagland, Deitz, Myers, and Co-sand¹ open their consideration of this subject. The Army doctors were stationed at the U. S. Military Academy, West Point, N. Y., and their investigations were conducted there. The authors go on to tell us: "The aim of this investigation of results with antihistaminic drugs for colds was to eliminate as many variables as possible. The study was confined to healthy young men in the military service. Medical attention was rendered before the subject's duties began, eliminating the temptation to needlessly seek medical attention to avoid onerous duties. Personal prejudice was lessened because the physicians prescribing treatment and making follow-up examinations were unaware of what medicines the patients were receiving.

"Pharmacists dispensed one of five medicines in order and recorded the necessary protocol in a ledger. Patients were encouraged to report for medical attention as soon as practicable; we noted particularly the effect on local and constitutional symptoms, the development of thick nasal discharge, the duration of this cold compared with the average length of a cold for the patient and the occurrence of undesirable side effects."

The authors found: "This investigation of 190 patients with head colds disclosed that cures within twenty-four hours were reported by 16 per cent of patients given antihistaminic drugs orally; 27 per cent of 70 patients receiving placebos (oral and intranasal) also reported cures. Lessened serous nasal discharge was much more common in subjects receiving antihistaminic drugs than in those receiving placebos . . . It is apparent that patients receiving oral placebos fared at least as well as those taking tripeleennamine hydrochloride and chlorothen citrate orally. Patients receiving tripeleennamine hydrochloride solution by nebulizer experi-

enced essentially the same results as those receiving oral and intranasal placebos."

And we are further told: "The widespread use of antihistaminic drugs by the public, as well as by physicians, for the cure of the common cold and the paucity of controlled work in this field require confirmatory investigations under carefully controlled conditions.

"Many factors involved in an accurate appraisal of the head cold have been eliminated in this investigation, which was along lines set down by H. S. Diehl at the University of Minnesota. Unavoidably, diagnoses and results of treatment had to depend largely on statements by the patients, as in previous investigations referred to in this article."

The conclusions in part are: "The necessity of carefully controlled clinical investigations of treatment of the common cold is again demonstrated; in this investigation 27 per cent of patients receiving inert materials reported cure within twenty-four hours."

"There was no significant difference in the proportion of cures reported by patients receiving oral antihistaminic drugs and those receiving oral placebos. Furthermore, essentially the same proportion of patients reported no benefit from either type of treatment."

"Patients receiving antihistaminic drugs within twenty-four hours after symptoms began were as likely to fall into the no effect group as into the cured group."

"Although the use of antihistaminic drugs orally and intranasally may decrease the irritating nasal discharge characteristic of the early phase of the common cold, the brief and variable duration of this phase makes a positive conclusion regarding this point difficult."

It is indeed to be regretted that more inquiries concerning the common cold similar to this one have not been made. The medical officers have endeavored to be factual and their methods and conclusions appear to be sound and sensible.

It may well be that the period of excessive, indiscriminate and exceedingly ill-advised use of the antihistaminics for relief and prevention of the common cold is drawing to a close. The overenthusiasm of the public for such alleged cures is more or less understandable, however regrettable it may

be. But the fact that many physicians joined in the reckless prescribing of these dangerous drugs, plus the shameless exploitation of them by some pharmaceutical houses, is enough to give us pause.

1. Hoagland, Lt. Col. R. J.; Deitz, Capt. E. N.; Myers, Lt. P. W., and Cosand, Lt. H. C.: *Antihistaminic Drugs for Colds*, J. A. M. A. 143: 157 (May 13) 1950.

CONGENITAL SYPHILIS

Early discovery and treatment of 100,000 children estimated to have congenital syphilis will save taxpayers millions of dollars in the opinion of Dr. Walter Clarke, executive director of the American Social Hygiene Association.

Prompt treatment of syphilis infections will usually prevent complications, such as deafness, bone deformities, mental illness and blindness, which disable and cause dependency, he said.

Pointing out that the disastrous and costly effects of syphilis can be prevented only by finding cases in the early stages and instituting treatment, Dr. Clarke commended current plans of the United States Children's Bureau and Public Health Service to coordinate the federal venereal disease and maternal and child health programs in a concerted drive to find and treat syphilis in pregnant women and newborn babies.

If the 100,000 children of ten or under who are estimated to be suffering from congenital syphilis remain undiscovered and untreated, a large proportion of them will end up in hospitals, a heavy burden on public relief and private charity for the remainder of their lives, Dr. Clarke emphasized.

"If these cases are not found, the taxpayers must be prepared to pay huge sums for institutional maintenance, medical care, relief for unemployables and their families, services for the handicapped and other specialized help for syphilitics unable to maintain themselves," he said.

Dr. Clarke said that the American Social Hygiene Association, pioneer national citizen's group in the fight against venereal disease, would actively support the federal government's search for congenital syphilis by intensified emphasis on the Association's five-point program designed to:

(1) Inform the public that every expect-



tant mother should undergo an examination and blood test by a reputable doctor or clinic as soon as she knows she is pregnant.

(2) Publicize and explain prenatal and premarital examination laws to the citizens of the states already having such legislation. No law, no matter how sound, can be fully effective if the people do not know of its existence and do not understand and support it. Dr. Clarke pointed out.

(3) Encourage enactment of blood test laws in the 10 states which do not yet require premarital examinations and in the seven states which still do not require prenatal blood tests for syphilis.

(4) Appeal to physicians in private prac-

tice as well as in hospitals and clinics, in states where prenatal laws have not yet been passed, to make a systematic search, including a blood test, for syphilis in every pregnant woman.

(5) Assist public health officers, medical social workers, nurses and others in contact with families to see that every pregnant woman gets at least one blood test and adequate treatment for syphilis if needed.

In addition to the eradication of venereal diseases, the 37-year-old American Social Hygiene Association stimulates education for marriage and parenthood and the repression of commercialized prostitution.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE HUMAN FACTOR

W. A. Dozier, Jr.

Director of Public Relations

Some people who wade through the following few paragraphs will probably decide that this article is made up of pretty shallow thinking, that there is nothing profound in any part of it. Undoubtedly that will be true, but as one college professor used to say, "I know this may sound elementary, but it always helps to go back and touch first base."

The human factor in all our relationships, one with another, is so basic and so ever-present that we too often take it for granted and completely fail to include it in our equation for solving a problem. The obvious is so easily overlooked, especially if we live with it every day. Take for example people from Alabama who travel thousands of miles to see some pretty scenery. The fact that one may find scenic grandeur here in Alabama never dawns on them. It is perhaps too obvious, and also we live too close to it.

The other day an incident occurred which set off a chain of mental ramblings on this matter of overlooking the human factor. One is told that the public health administrative organization in Alabama is completely at variance with the rules as set out

in the books; still the accomplishments that have been achieved by the Health Department are great indeed. A study is being made to see why, although contrary to theoretical good practice, such advancements have been possible. The question could easily resolve itself into whether or not the theory had overlooked the human factor. It is to be hoped that the present study will not fail to consider this obvious yet all important aspect.

Actually public relations is based on an attempt to consider more fully this elusive and varying quantity. Some people feel that there is a need for public relations only because people, individually and collectively, have for some time failed to consider the human factor in its proper perspective. Surely it is easier to say that this or that plan works smoother and nets better results, but what happens when human feelings and attitudes begin to play into the picture! And these attitudes do not come from chronic malcontents; they spring from average human beings such as are found all over this country. (The word normal has not been used, for many people doubt that anyone knows what is normal. Perhaps it might have been better to say everyday human beings.)

Is not the overlooking of this human factor the basis of discontent which is to be found

in so many people? Was it not just exactly this factor which caused our forefathers to organize the government which is stipulated in our Constitution? And is it not true that the larger and more centralized the government becomes the less possible it is to consider the human factor—the ultimate of which may be found in a dictatorship?

There is one thing that can be said for the human factor in any equation that is set out. One can depend on its being unpredictable. Maybe that one quality is the most interesting thing in life. No matter how hard one tries he can never be certain of the reaction that people will have to a certain set of circumstances. Although interesting to the point of fascination, it may be this unpredictability which causes people and theories to deal as lightly as possible with the human factor.

Perhaps the greatest fault to be found

with the social planning and with the laws resulting from this planning is that the human factor is too often misrepresented in the equation. Maybe this is so much an unknown quantity that one cannot gauge it properly. To say the least it is very easy to say that such and so is for the good of the people, and theoretically this may be true. But in the final analysis the all important aspect is the person and his reaction, feeling, attitude, and resultant course of procedure based on his own personal view of the problem.

It becomes evident, on rereading the above paragraphs, that perhaps first base has not been touched. Perhaps these mental ramblings have lead no place, and perhaps the only value has been the physical exercise received from beating the typewriter. Perhaps—but then perhaps not.

WOMAN'S AUXILIARY

Mrs. J. G. Daves, Cullman, President

REPORT OF THE PRESIDENT, 1950

Mrs. W. J. Rosser
Birmingham

The Woman's Auxiliary to the State Medical Association sends greetings to the officers, Board of Directors, and members of the Woman's Auxiliary to the American Medical Association.

The Auxiliary in Alabama, celebrating its Silver Anniversary this year, has continued to increase in membership interest and achievement. The Auxiliary had its beginning April 29th, 1923 at Mobile with the late Mrs. Seale Harris as President, at which time twenty three members-at-large were present. The work was revived in 1925 and Alabama really went to work when our very own Mrs. Seale Harris was elected National President for 1925-1926. The membership in April 1950 was over 700 members. This included 26 members-at-large. Since then more members have been added, and we hope to approach the 1000 mark soon.

During the year three Executive Board meetings were held. At the first meeting the President of the Medical Association and other members of the Advisory Board met with us and approved the plan of work. The Director of Public Relations for the Association helped us make and carry out our plans for the year.

At the close of our first Board meeting we invited, as our guests for lunch, the presidents of the Alabama Congress of Parents and Teachers, the A. A. U. W., the Federated Clubs, the

Business and Professional Women, our press and publicity leaders, and others; with one of the press as our guest speaker. Over fifty members of the Board were present at the meeting, which was conducted as a workshop. Each member left with enough suggestions, material (collected by the Program Chairman) and enthusiasm to last throughout the year.

The theme, "Increased Informed Active Members," has been the outstanding factor behind the many accomplishments for the year. One of the incentives toward carrying this theme out was the plan worked out by one Auxiliary for Dr. W. W. Bauer to spend a week in Alabama.

There are twenty-one organized counties; seven new ones having been organized this year. Three counties have reached their goal of 100 per cent membership. Three had a 20 per cent increase, and others lost a few members. Progress toward organization was made in several counties. The President was able to visit all the Auxiliaries except one, and also the district meeting held by the doctors. She traveled day and night attempting to encourage the members to be friendly, informed and active. She attempted to get doctors' wives to realize that the hour may be later than they think and that they should do their part to help save our American way of life. (The activities of the Auxiliaries have been varied, but all closely followed the suggestions coming from the National and State organizations.)

This year we had a new committee added, known as "Year Book and Members-at-Large."

This work gave new interest and enthusiasm to each county and especially the counties where we had no Auxiliaries. We believe this will add special help and enthusiasm toward organizing new Auxiliaries.

Definite directions and materials were sent out from our State Legislative Chairman. As a result, several counties had a legislative study course and also sent some three thousand letters and cards to our leaders. The Auxiliaries, where the members actually participated, received the most benefit from the study. We worked to defeat the President's Reorganization Plan which resulted in over 65 sets of telegrams being sent to our Senators and Representatives.

Through the American Medical Association, material relative to the National Health Insurance Bill has been sent to all the public libraries in this state (colored and white), and to most of the high schools. Thousands of pieces of literature have been given personally by our members to Parent-Teacher Associations, federated clubs, church groups, and other organizations.

Our State Legislative Chairman arranged for an interview with a British woman doctor (who was stationed on a boat at that time in port) and the press. She felt that the program in Great Britain was not satisfactory and the press handled the interview masterfully.

One of our Auxiliaries assisted its County Medical Society in arranging a banquet December 9th, 1949. This banquet was attended by doctors, dentists, druggists, prominent officials and all the Auxiliaries, at which Senator Lister Hill and Congressman Frank Boykin spoke and were thanked for their assistance in defeating the President's Reorganization Plan. Senator Lister Hill was also on our Convention program in April.

We have only had about six radio programs arranged by the Auxiliaries. One outstanding program was given by a banker who spoke against the National Health Bill and another by Dr. W. W. Bauer, whose subject was the "Field of Health Education."

Doctors' Day was observed by all the Auxiliaries on or near March 30th, with new enthusiasm and interest this year. The radio and press were very generous in the right type of publicity and the florists were indeed glad that all doctors in Alabama wore red carnations or had them placed in hospitals in their honor. The doctors were pleased with the personal attention and new interest gained for the Auxiliaries. Much research and papers on the lives of Alabama doctors were given, followed by teas with doctors as guests. One Auxiliary had enough papers printed to give to all the Auxiliaries. Eighty-two dollars was given for the Jane Todd Crawford Memorial Fund.

We have a number of outstanding scholarship funds. The Lettie Daffin Perdue Fund had \$1017.00 added to the principal, the interest to be used as a state scholarship. One Auxiliary has two boys graduating this year from our Alabama Medical College. This Auxiliary has \$2000.00 invested in three boys and \$500.00 for nurses. Sev-

eral of the Auxiliaries are sponsoring nurse scholarships and recruitment. A movie, "Girls in White," was shown to a number of high schools.

Our Public Relations Chairman has had an unusually good year with excellent help coming from the Public Relations Director and the State Medical Association, with still plenty of room for improvement in some of the county societies. The Auxiliary was represented at the State Public Relations Meeting, and our National President-Elect, Mrs. Arthur A. Herold, was an inspiration and a revelation to the doctors and wives at our State Convention in April. Over 100 talks have been made to various civic organizations. At every meeting material was given out on socialized medicine and voluntary health insurance. One hundred and ninety-four clubs were given material for their programs. The members of the Auxiliaries were requested to volunteer as Health Chairman in each organization. Marvelous results were reported by many. A few of the Auxiliaries gave teas, with speakers who were informed on the projects we were sponsoring, inviting all club presidents and presidents of parent-teacher associations with written invitations. Fifty members have given hours of volunteer work with agencies interested in the control of heart disease, tuberculosis, cancer and the social diseases. At all times we have worked with the local and State Health Department.

Bulletins and Hygeia (Today's Health) subscriptions have been stressed at every meeting. One Hygeia Chairman sold 109 subscriptions and used the profit to place a nurse in training. One reported that every doctor was asked to subscribe and finally did at list price, giving the Auxiliary the extra money to go into the treasury.

The State Historian and Program Chairman displayed scrapbooks, year books, manuals, socialized medicine material, etc., at the State Convention.

Press and Publicity: The doctors have given us unlimited space in the Journal of the State Medical Association. One of our Vice-Presidents has given hours of her time getting material ready for the Journal each month. Our Press and Publicity Chairman has found local newspapers ready and waiting for good publicity at all times. The Association's Public Relations Director has offered to help get out a News Letter to every doctor's wife in Alabama this year, and plans are to begin early in the fall.

The Medical Association of Alabama is giving increased attention to the Woman's Auxiliary in many ways, indicating that it considers the Auxiliary a very valuable ally and intends to utilize its services in a greater degree than ever before.

The Auxiliary may be proud of the progress that it has made in the first twenty-five years of organization. It has been accomplished with the combined efforts of every member.

In closing may I express my own personal appreciation for the splendid cooperation and interesting effort of all that made possible the foregoing accomplishments.

REPORT OF THE FIRST VICE-PRESIDENT

Mrs. H. R. Cogburn
Mobile

During the past year efforts have been made to increase the number of county Auxiliaries and to enroll members at large in counties where no organization could be perfected.

Several counties felt that there were not enough prospective members to justify having an Auxiliary in that county.

Wives of doctors have been approached in person and by correspondence and it is to be hoped that some interest has been planted which will bear fruit at a later date.

REPORT OF THE SECOND VICE-PRESIDENT

Mrs. W. G. McCown
Huntsville

Early in the year Mrs. Jordan and I went to Albertville, Marshall County, and helped complete the organization there. We had a lovely visit with the new Auxiliary.

We visited several doctors and wives in Athens, Limestone County. None of them were at all interested, in fact, most discouraging about an Auxiliary in that County.

We invited several of the wives over to a special meeting in Madison County, hoping this might create interest in their organizing, but the invitation was declined. I don't think there is much hope at present for an Auxiliary in Limestone due to the fact that they do not have an active County Medical Society. I mentioned that organizing the women might stimulate interest in the Society.

I sent a form letter, with all necessary material for organizing, to Jackson County and told the lady to whom I wrote I would be glad to come up and help her at any time. I later wrote a long personal letter telling about our Auxiliary, the work we are doing and the good times we have. Although I had no reply to my letter, I have learned that Scottsboro has organized. I was so glad to learn of this, and extend my sincere congratulations.

REPORT OF THE THIRD VICE-PRESIDENT

Mrs. Fred D. Reynolds
Montgomery

It has been my privilege to serve this past year as your Journal Representative. I do not feel that my efforts have been to much avail, and have been rather discouraged to learn there have been few readers. For those who do not know the Auxiliary has been using the Journal, may I explain: It has been the wish of the Auxiliary that we have some way of keeping our members advised regarding our work, and no better means could possibly be placed at our disposal, with no expense to our organization, and no limit as

to the space we need for our material. Dr. Douglas Cannon has been most gracious in helping me with the Auxiliary work throughout the year and we are most fortunate in having his support.

I sincerely hope that next year every state officer, committee chairman, county Auxiliary, and every member-at-large will make use of the Journal in making their work and ideas known. This is an excellent way of keeping ourselves informed.

I will not take all of the blame as being a poor writer, not able to hold the interest of the reader, for failure of our members to read the Journal. I believe interested members would have excused all of that if their husbands would have taken the Journal home from their offices. I asked them to remember to do this but they forgot to remember. I do hope a future date will find the Journal mailed to the homes instead of the offices, then the ladies will have an opportunity to keep up with what is going on; and, I might also add, the husbands will find more time to read its worth-while contents.

REPORT OF THE FOURTH VICE-PRESIDENT

Mrs. Gilbert B. Greene
Demopolis

Last summer letters were written to wives of the Presidents of three County Medical Societies, namely, Wilcox, Perry and Marengo, asking their cooperation in organizing an Auxiliary if there were enough doctors' wives, and if not to attend the newly formed Dallas County Auxiliary.

The following is the result. I should like to have Wilcox County recognized as an organized Auxiliary although the members attend the Dallas County meetings. There are five members. Mrs. J. P. Jones of Camden is President and Mrs. E. L. McIntosh, Secretary and Treasurer.

The wives of two of the physicians of Perry County also attend the Dallas meetings.

Marengo County, of which I am now a resident, has not been organized as yet, but we hope to in the near future and will try to include Greene and Sumter.

REPORT OF THE HISTORIAN

Mrs. DeWitt Faucett
Gadsden

Reports from the County Auxiliaries show much progress and unusual enthusiasm in carrying out the aims of the Woman's Auxiliary to the State Medical Association. The number of organizations has increased from fourteen to eighteen. Due to the excellent work of Mrs. J. G. Daves, the President-Elect, and Mrs. W. J. Rosser, our President, DeKalb, Pike, Escambia and Marshall Counties were organized.

Programs of the various Auxiliaries have been outstanding, stressing a number of health projects. Speakers from our Health Department,

also from the Medical Association, were used.

In stressing public relations it is pleasing to note that all Auxiliaries have carried out this phase of work. Several have worked with parent-teacher associations in promotion of health activities. Others have sponsored Girl Scout groups. All Auxiliaries have participated in the Red Cross call, March of Dimes, Crippled Children's Clinic and Community Chest projects. In the Cancer Campaign and Heart Control Campaign many hours of work were given. To all these worthy causes donations of money were generous.

All Auxiliaries have outlined active programs on the evils of socialized medicine. This is probably the outstanding work of the year. Montgomery Auxiliary, under the leadership of Mrs. Henry C. Collins, instituted a study course to acquaint its members with facts on this issue so that they may be qualified to answer questions and present facts intelligently to the public.

Our national magazine, *Today's Health*, has shown an increase in subscriptions. A number of Auxiliaries have placed this magazine in the high schools, including the colored schools of their counties. Marshall County Auxiliary sponsored an oratorical contest on "Compulsory Health Insurance" in five high schools. All Auxiliaries have observed Doctor's Day in various ways.

Jefferson County Auxiliary is continuing its scholarships; one to a medical student and five loan scholarships to nurses. Montgomery Auxiliary and Cullman Auxiliary each maintain a loan scholarship for nurses.

Many social affairs have been held to cultivate friendly relations and promote mutual understanding between physicians' families.

An Executive Board meeting was held in Birmingham on September 8. Mrs. W. J. Rosser, President, presiding. At this meeting a workshop was held. Various plans and methods were discussed. A proposed program and study course for the Medical Auxiliary was presented and adopted. A splendid program and luncheon at the Woman's Club was enjoyed. Our President, Mrs. Rosser, and our President-Elect, Mrs. J. G. Daves, attended the National Auxiliary Board Meeting in Chicago on November 3rd and 4th.

The year's work of the Auxiliary culminated in the annual meeting held in Birmingham April 20-21. A splendid program was arranged for the delegates and the lovely social affairs provided by the Jefferson Auxiliary were deeply appreciated.

REPORT OF THE LEGISLATIVE CHAIRMAN

Mrs. Mack J. Roberts
Mobile

During the summer of 1949 I interested a number of counties and many persons in the President's Reorganization Plan which resulted in about 45 sets of telegrams being sent to our Senators and Representatives urging its defeat.

Through the American Medical Association, material relative to the National Health Insur-

ance Bill has been sent to all the public libraries in this state and to most of the high schools.

The local Auxiliaries have carried out educational programs both for themselves and for the public. The Bessemer Auxiliary has had 1000 postal cards printed and is having them signed, these to be sent to their National Representatives. These cards give reasons the signer is against the National Health Insurance Bill. It is also conducting an educational program acquainting the public with the proposed health bill and its evils.

The Montgomery Auxiliary has had an educational program, spending a half hour after each meeting studying some phase of socialized medicine.

The Mobile Auxiliary has spent its efforts in an educational manner, showing the public what had been done under free enterprise and how this would be thwarted under a welfare state. This was done through a radio program, by publicity and by a large celebration of Doctor's Day. They also furnished a speaker, Mrs. J. U. Reaves, to answer an address which had been given in behalf of socialized medicine.

This has been a pleasant year and I have enjoyed working with Mrs. Rosser, the State President, and with each of the State and County Officers. I want to thank each and every one of you.

REPORT OF ARCHIVES AND EXHIBITS

Mrs. J. Mac Bell
Mobile

I have had forty copies of Mobile County's Doctor's Day Program mimeographed. Our President, Mrs. Mack Roberts, did a fine piece of research and wrote an outstanding paper on Dr. Josiah C. Nott. Mrs. John C. Hope, Jr., wrote a fine paper on Dr. J. Marion Sims. Mrs. Samuel S. Eichold's paper was on Dr. Seale Harris. Copies of these papers will be presented to each Auxiliary.

Dr. Emmett Carmichael wrote me he would like to have notice of any old papers or diplomas that might be of interest to the University of Alabama Medical School. Space is limited and only instruments and papers of value can be accepted.

REPORT OF PROGRAM CHAIRMAN

Mrs. J. C. Carmichael
Birmingham

The program chairman has urged the program committees of each County Medical Auxiliary to cooperate fully in becoming familiar and to carry out the 12-point program of the A. M. A. to ward off compulsory health insurance.

At the State Board meeting in September, packets of program materials containing the Handbook of State Auxiliaries, a sample copy of the Bulletin, sample copy of *Hygeia* or *Today's Health*, booklet on National Conference on Rural

Health, lists of electrical transcriptions available, charts and graphs concerning voluntary prepayment medical care plans, and materials from Whitaker and Baxter were distributed to County Presidents or Program Chairmen.

The matter of getting the program as adopted by the A. M. A. in late May or June through the proper channels and to the program planning committees during the summer is always a matter of concern. However, the mimeographed materials and suggestions from Mrs. Schaefer, National Program Chairman, and suggestions from the State Program Committee did go forward on August 1, 1949.

Of the 15 Auxiliaries organized at that time, 8 sent in the copies of yearbooks as requested, in time to be sent to the November meeting of the National Board. Two yearbooks have been received since that time and two other Auxiliaries have reported that they had no yearbook. Based on the outlines of programs in the yearbooks, the State Program Committee wishes to recognize the Woman's Auxiliary to the Walker County Medical Society as having done the best job on programs of any Auxiliary in the state; and the Woman's Auxiliary of Marshall County Medical Society for the cleverest form for the yearbook.

The program chairman has attended the State Board meeting in September, and has cooperated with the State President in getting program materials together for the newly formed Auxiliaries.

In working on programs let us always bear in mind: *"Study without action is futile, but action without study is fatal."*

REPORT OF LETTIE DAFFIN PERDUE FUND

Mrs. Edward S. Sledge
Mobile

Telegram from Mrs. Sledge as received by Mrs. W. J. Rosser at the convention:

"Thrilled to announce gift of \$1,000 to Lettie Daffin Perdue Scholarship fund from Lettie's sister. Seventeen dollars from three county auxiliaries. At present have \$2,500.00 invested at five per cent interest. Also available \$164.63 for loan scholarship. Total principal for investment \$2,866.62. Please urge all counties to contribute to this fund."

REPORT OF DOCTOR'S DAY CHAIRMAN

Mrs. J. C. Chambliss
Cullman

Montgomery County Auxiliary observed Doctor's Day on March 30. Red carnations were worn by the doctors. The carnations were personally delivered by wives on the Doctor's Day Committee.

Mobile County observed March 20 with a radio broadcast by the President on compulsory health insurance, and citing three great Alabama Doc-

tors, Dr. Josiah Nott, Dr. J. Marion Sims and Dr. Seale Harris, this with newspaper reporters and photographers. All wore red carnations.

Morgan County observed March 27 with publicity before and after, including pictures of the President of the Auxiliary pinning a red carnation on the President of the County Medical Society, and several pictures of the group later at play, including a front page feature story on Sunday.

Colbert County observed March 30 at the Country Club with a dinner party and a skit by some of the doctors, under the direction of an Auxiliary member, which furnished hilarious fun.

Marshall County observed March 30 with a dinner party, with publicity before and after. All the doctors wore red carnations.

Madison County observed Doctor's Day with a dinner party, with appropriate impersonations of some of the doctors, followed by a square dance and Virginia reel, followed later with a phase generally deplored in the best of medical circles, "Oh, my aching back."

Cullman County observed March 30 with a dinner party, a skit by one of the doctors and one of the Auxiliary members, followed by games and contests with prizes for each. Red carnations were worn by all the doctors, with publicity before and after, including pictures.

Our Chairman of members-at-large reported that she had asked each member to observe Doctor's Day in some way, and that most of them had.

Jefferson County, Bessemer Auxiliary, honored its doctors with a party on March 30.

Calhoun County had a dinner party at the home of Dr. and Mrs. Woodruff, with entertainment after, with publicity before and after the party. Each doctor wore a red carnation.

REPORT OF YEAR BOOK CHAIRMAN

Mrs. E. F. Leatherwood
Hayneville

It afforded me great pleasure to make the 1949-50 Year Books for the Auxiliary (although it was hurriedly done). It would have been impossible to have made as complete a book as I made had it not been for the prompt response and assistance I received from all whom I contacted by letter or personally. When I asked Mrs. Chandler for the Auxiliary roster, it came promptly and alphabetically. What more could I want? We are indebted to Mrs. J. U. Reaves of Mobile for what we have of the origin of our Auxiliary, which she so readily gave me. I made 90 books for the Auxiliary at a cost of about 28 cents each. I had helpful friends who assisted me to lessen the expense of production or it could not have been done so cheaply. I had a number of requests from members to buy a Year Book and I would like to recommend to the Auxiliary that the president of each county organization put it before her membership as to how many want Year Books at the first of the year, and let each pay for her book if the local Auxiliary has not the funds

available. I had a cut made of the front of our book which I have kept, and of course can be used for a number of times if this group wishes this done. The cost of the cut was \$3.50 and this cost will be eliminated. The new Year Books will use more space because we have grown during the last year. Even the members-at-large have grown from 5 to 26.

I did not keep a record of letters written or any expense except the actual cost of producing the Year Book, so what I did will just be my contribution to the work. Mrs. Rosser has been a lovely person to work for and with, as well as the others whom I have contacted, and again may I say: "It has been a pleasure to serve you the past year as your Year Book Chairman."

REPORT OF HYGEIA (TODAY'S HEALTH) CHAIRMAN

Mrs. F. C. Smith
Bessemer

Cards have been sent to Auxiliaries through the year and reports received from thirteen Auxiliaries. My report can not be complete without some report from all of them.

Three new Auxiliaries reported no Hygeias subscribed for but expect to have some next year. Ten Auxiliaries sent in splendid reports. Because of extended subscriptions for two and three years the numbers did not seem so big but count just the same.

To Montgomery for 107 subscriptions and to Morgan with 16 members and 22 subscriptions I wish to present a red and white ribbon.

REPORT ON JANE TODD CRAWFORD SCHOLARSHIP

Mrs. C. L. Salter
Talladega

Brochures on the life of Jane Todd Crawford and information concerning the Memorial Fund were sent from state headquarters' office direct to each county President. Your Chairman later followed this up with letters, outlining the suggested program and stating that she hoped it would be convenient for all county organizations to cooperate with the Southern Chairman in her plan for the larger Auxiliaries to contribute as much as \$10.00 each to the Jane Todd Crawford Memorial Fund and the smaller Auxiliaries as much as five dollars each.

For the convenience in reporting, a postcard questionnaire was sent to each county President.

It is very gratifying to report that practically all county Auxiliaries have demonstrated a desire to honor the memory of this noble woman, Jane Todd Crawford, by giving a special program, telling again the story of her courageous life and her contribution to surgery.

Out of nineteen organized county Auxiliaries ten reported contributing to the Jane Todd Crawford

Memorial Fund. Five dollars came from each of the following counties: Colbert, DeKalb, Escambia, Jefferson (Birmingham), Marshall, Morgan and Talladega; \$2.00 from Jefferson (Bessemer), and \$10.00 each from Dallas and Etowah.

Total amount contributed was \$57.00

REPORT ON MEMBERS-AT-LARGE

Mrs. E. F. Leatherwood
Hayneville

When the roll of members-at-large was sent me, there were five names on it, including mine. With the splendid aid of Mrs. Rosser, our President, we have now twenty-six, including three honorary members whose husbands have passed on, leaving their records in good standing with the State Medical Association entitling them to be honorary members-at-large. I am proud to say of my county, Lowndes, it is 100 per cent, including two honorary members, Mrs. R. B. Hagood, Lowndesboro, and Mrs. W. E. Lee, Fort Deposit.

My husband serves two counties as Health Officer, Lowndes and Butler, so after making Lowndes 100 per cent, I made an effort to do the same for Butler County. I have five of the thirteen eligible women enrolled for membership-at-large.

(As an explanation to those who did not attend the Convention, Mrs. Leatherwood had prepared a map of Alabama, which she displayed before the convention group, and as she finished reading this report each county was pointed out to the group.)

We have on our wall an outline of our state, with red pins where we have members-at-large, and I will call them out to you. From Baldwin County we have one: Mrs. N. Van Wezel of Foley. From Butler we have five: Mrs. A. A. Stabler, Mrs. M. H. Mason, and Mrs. L. V. Stabler, all of Greenville, and from Georgiana, Mrs. Tom Melton and Mrs. R. H. Watson. Clarke County gives us Mrs. J. C. Godbold at Whatley and Mrs. R. D. Neal, Grove Hill. From Conecuh, Mrs. E. A. Mayo, Repton. Hale County gives us Mrs. Wm. P. Baston, Moundville; Lowndes which is 100 per cent, which I am proud to repeat, Mrs. R. B. Hagood, Lowndesboro, Mrs. W. L. Stagers, Benton. Mrs. J. J. Kirchenfeld and Mrs. W. E. Lee, Ft. Deposit. Mrs. E. F. Leatherwood, Hayneville. Mobile County gives us Mrs. H. H. Mintz, who is close to the Mobile Auxiliary, and Mrs. Claire K. Bryant, at Bay Minette, and also Mrs. Philip Gilchrist. Monroe County adds to our roll Mrs. W. A. Stallworth of Frisco City; and Mrs. R. A. Foshee is from Alexander City, Tallapoosa County. Then we have Mrs. J. N. McLain who is an honorary member from Pensacola. The members-at-large and who are still on roll are: Mrs. A. P. Matthews, Ozark, Dale; Mrs. J. M. Crawford, Arab, who now belongs to Marshall County; Mrs. W. E. Stinson, Marvel, Bibb; Mrs. A. C. Pratt, Centerville, Bibb and Mrs. E. F. Leatherwood,

Hayneville, Lowndes. I wish to say that I am a member-at-large, but the Montgomery Auxiliary actually put my name in its Year Book. Mrs. Rosen, its President, notified me of all meetings, of which I have been able to attend all but two and there has been a splendid fellowship existing. I feel like an adopted member of the Montgomery group.

I wish to say also that I wrote all the members-at-large asking them to observe Doctor's Day on

the 30th of March with the Auxiliaries, by pinning a red carnation on her husband's coat and writing her husband a note of their appreciation of him. I personally observed this day in this way. I am delinquent here again by not keeping up with the letters written, but I have not been delinquent in writing letters, I am just a bad executive, and this will also be a contribution from me for the work.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

A PIONEER IN THE BATTLE AGAINST CANCER

Alabama's capital city has many points of historic interest. Indeed few cities in the South or anywhere else have such a strong appeal to tourists and students of American history. Its wealth of buildings and sites associated with great events has made it something of a Mecca. Almost any time Montgomerians in the non-residential districts can look out of their windows and see buses unloading school children from all over the state. Other buses may be seen parked near some center of tourist interest, waiting for eager youngsters and their teachers to return for the trip back home. And "back home" means practically every county and community in the state. Morning and afternoon, small parties may be seen entering public buildings. Others may be seen reading bronze plaques explaining the significance of the sites on which they have been placed.

One of the most significant markers of that kind is at 21 South Perry Street. Like most of the others, it is of bronze. It informs the person reading it that it marks the site of the office and infirmary of Dr. J. Marion Sims. On that spot, although it was then occupied by another building, this Alabamian-by-choice, who was to become a world-famous surgeon, performed a series of remarkable operations. The year was 1845.

That ancient structure, long since destroyed, was, to all intents and purposes, the first hospital ever to exist for the exclusive treatment of diseases peculiar to women.

It was situated at the rear of the building Dr. Sims had erected some time before for use as an office. At first that tiny place of healing which was to serve as a trail-blazer in an important field of medicine had beds for only six patients. Later he enlarged it, doubling its capacity and providing space also for four servants. There Dr. Sims kept four Negro slave girls for many months at his own expense, trying to find a means of curing them of the dread vesicovaginal fistula. Failure followed failure. Discouragement rose to haunt him time after time. His fellow-physicians thought he had lost his mind. He skirted close to the thin edge of personal bankruptcy. But he would not give up. When one technique would prove unsatisfactory, he would try another. Few men have persevered against tougher odds. Few would seem to have had more reason for quitting in disgust and despair. But Dr. Sims was no quitter. He did not become completely discouraged, although the going was hard for a long time.

His faith in himself and his determination to do something for those four slave girls eventually paid off. One of the many techniques he developed finally did what the many before it had failed to do. First one and then the other three victims of that disease of womanhood recovered. A master stroke had been delivered against one of humanity's cruellest diseases. For, what he was able to do in Montgomery, Alabama, other surgeons were able to do all over the world. And, they did it. Moreover, they are still doing it. And, for some hundred years vesicovaginal fistula has ceased to rank among the major forms of illness.

This brilliant chapter in mankind's strug-

gle against its disease enemies is recounted in "Woman's Surgeon," recently published. It is the work of an Alabama physician of our own day who has won renown in his own and other fields. Dr. Seale Harris, of Birmingham, has done much to make Alabamians proud of their state's famous sons.

Dr. Sims' conquest of vesicovaginal fistula has received considerably more attention from writers and speakers than other aspects of his career. One of its comparatively neglected chapters is described in *Cancer*, the official publication of the American Cancer Society.

On November 19, 1874 this native of South Carolina and famous Alabamian spoke to the various boards in charge of the Woman's Hospital, in New York City, for which he was largely responsible. The speech those men and women heard from his lips was not the kind they had expected to hear. But they did not know how intensely he had been feeling on the subject of cancer. They had no idea he felt as strongly as he did about the hospital's unwillingness to accept cancer patients. And they did not give Dr. Sims credit for the courage to speak out, fearlessly and boldly, for whatever he thought was right.

"Your Boards," he said to his distinguished listeners, "have forbidden us to admit cancer cases, even in their mildest forms and in their earliest stages. I have no hesitation in saying that in this instance you have transcended the bounds of your authority. But your Medical Board, feeling themselves powerless to resist, have submitted to your dictation, and we have admitted no such cases since we adopted the rule, acted upon at your command, not to do it."

Dr. Sims made no bones about it: He was utterly and unalterably opposed to the Boards' policy of keeping the doors of the Woman's Hospital firmly closed, as far as cancer patients were concerned. This, he felt, was unjust. It was unfair. It was a form—a bad form—of medical blindness. And he made it clear that he wanted the rule changed.

It seems strikingly strange, in this day, that it should have been necessary to fight for the right of cancer patients to be admitted to a hospital. We now take it for granted. We consider that cancer patients have the same right to hospital treatment that

anybody else has. But that was far from true in the 1870's. To put it brutally, there was believed to be little hope for the cancer patient then. It was considered a waste of time to try to do anything for him, or her. Too, cancer was considered something to be ashamed of.

The authors of the article mentioned above went to some pains to point out what people thought of cancer and its victims at that time. They are Dr. Hayes Martin, Dr. Harry Ehrlich and Miss Francelia Butler. They wrote:

"It took courage indeed to talk to such a group about cancer, for cancer had not yet become a respectable disease; by some it was considered of venereal origin; others believed it to be contagious. Only a man of Sims' stamp would have dared bring the fight into the open."

Dr. Sims soon found how much courage it really did take to speak out as he had just done. He had barely resumed his seat when a highly offended member of the Board of Governors jumped to his feet and objected strongly to his remarks. His three fellow-members of the Medical Board declared that Dr. Sims had spoken for no one on the Board but himself. Soon afterward the courageous Southerner found himself fired from his position as a surgeon on the staff of the Woman's Hospital.

Fortunately, the firing did not "stick." There was a strong reaction to the Board's precipitate action. Dr. Sims' surgical genius began to be missed in the operating room. Criticism of the Board's move began to be felt in the financial affairs of the hospital itself. Gradually came a realization that the action taken against him had been ill-advised.

So a movement got under way to bring about his reinstatement. It grew slowly at first. Then it began to gain headway. The result was that the Medical Board recommended to the Board of Governors that he again be made a member of the Woman's Hospital staff. That was in December 1881, some six years after his summary dismissal. The Board acted favorably on the recommendation and, in January 1882, he received an appointment as consulting surgeon.

But the new arrangement was short-lived and unsatisfactory. For his return had been agreed upon without an attempt to reconcile his and the Board's differences regarding the admission of cancer patients.

And Dr. Sims was as firmly set in his views on that subject in 1882 as he had been in 1874. A group of those who had opposed him before swung to his side in the controversy and recommended that certain cancer cases be admitted. But they were unable to convince others whose opposition was deadly. Dr. Sims again found himself in an extraordinarily difficult position. So once more his association with the institution he helped found came to an end. Presumably, he was not fired this time. He simply quit.

Fortunately for Dr. Sims his discharge from the Woman's Hospital had not adversely affected his standing with his fellow-physicians. Two years after it occurred he had been elected president of the American Medical Association. About two years after receiving that honor he had been made Honorary President of the International Medical College, at Geneva, Switzerland. These are just two of many distinctions that had come to him during those few years.

That second and final separation from the institution came just about a year before his death. When his friends and relatives began gathering up his personal belongings after he died, they found a sentimental memento of his courtship. It consisted of a rosebud which the future Mrs. Sims had given him some time before their marriage. It was encased in a large watch. That childhood sweetheart who had since become his wife and the mother of his nine children was with him when the final call came.

During the last few weeks before death knocked and he answered, this man who had done so much for womanhood generally and had wished to do so much more for female cancer victims had dreamed enthusiastic dreams about a kind of hospital the Woman's Hospital was not. The imaginary institution of healing that filled his thoughts at that time was one for victims of this disease. There, he hoped, they would find the welcome and the curative power then being denied them. That place of welcome and cure (if possible) would be for them alone.

Dr. Sims not only did some deep thinking and enthusiastic dreaming during those final weeks of life. He acted. And he did what he could to make cancer enthusiasts of others. Just three weeks before the end he wrote a stirring letter to a member of the

Board of Governors of the Woman's Hospital. He said:

"A cancer hospital is one of the great needs of the day, and it must be built. We want a cancer hospital on its own foundation—wholly independent of all other hospitals. If we had one properly organized, it would call out and develop the talent necessary for its success. But a cancer hospital we must have . . .

"We have hospitals for lepers, and leprosy is more incurable than cancer; and we have but one cancer hospital in all Great Britain and none in our own country. It is time we turn a listening ear to the cries of humanity. Build a cancer hospital, provide it with the necessary comforts and the highest skill in treatment, and rest assured that patients will come from all quarters, too glad to avail themselves of such kindness and care as in your wisdom and generosity will provide for them."

The hospital of which he dreamed and for which he pleaded was not long in coming. The cornerstone for it was laid on May 17, 1884. New Yorkers of our grandparents' day knew it as the New York Cancer Hospital. It is now known as the Memorial Hospital for the Treatment of Cancer and Allied Diseases.

Alabama, too, has turned a listening ear to the cries of humanity. We do not yet have a hospital devoted to the treatment of cancer exclusively. But we have an aggressive cancer-curbing program that is doing much to rob this disease of its terror. Five diagnostic clinics are in operation in three Alabama cities, Birmingham, Montgomery and Mobile. Those found to have cancer in a curable stage may also receive treatment. Both diagnosis and treatment are entirely free to the indigent and the medically indigent. We are also battling cancer on many other fronts.

We Alabamians have great reason to be proud of Dr. Sims. Women the world over—cancer victims and others—have particular reason to be grateful to him.

Mass mobile unit x-ray surveys have imposed a new dual obligation upon the general practitioner. Determination of the activity or status of the frankly tuberculous lesion, and differentiation of pulmonary tuberculosis from other intrathoracic disease found in mobile x-ray surveys are now almost invariably responsibilities of the family doctor. Coupled with these duties, there still remains the necessity for early, accurate diagnosis of tuberculosis of any case seen in practice.—*Edwin J. Simons, M. D. and Edwin G. Knight, M. D., Journal-Lancet, April 1950.*

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

MAY 1950

Examinations for diphtheria bacilli and Vincent's	206
Agglutination tests (typhoid, Brill's and undulant fever)	1,419
Typhoid cultures (blood, feces and urine)	487
Examinations for malaria	826
Examinations for intestinal parasites	4,393
Serologic tests for syphilis (blood and spinal fluid)	28,270
Darkfield examinations	8
Examinations for gonococci	2,193
Examinations for tubercle bacilli	3,432
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	101
Water examinations	1,493
Milk and dairy products examinations	4,269
Miscellaneous	2,158
Total	49,255

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1950

	April	May	E. E.* May
Typhoid	5	4	6
Undulant fever	6	1	6
Meningitis	14	7	5
Scarlet fever	46	28	34
Whooping cough	93	162	191
Diphtheria	21	10	21
Tetanus	3	3	4
Tuberculosis	228	263	287
Tularemia	3	0	1
Amoebic dysentery	7	9	1
Malaria	3	7	152
Influenza	2225	232	180
Smallpox	0	0	0
Measles	481	280	895
Poliomyelitis	3	7	3
Encephalitis	0	0	0
Chickenpox	625	293	148
Typhus	8	17	19
Mumps	248	185	163
Cancer	447	365	220
Pellagra	2	0	4
Pneumonia	380	197	255
Syphilis	1097	1020	1762
Chancroid	21	12	18
Gonorrhea	395	331	607
Rabies—Human cases	0	0	0
Positive animal heads	46	18	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

The final diagnosis in pulmonary tuberculosis rests upon the demonstration of the tubercle bacillus just as that of carcinoma of the lungs depends upon histologic proof. A reasonable certainty of predicted diagnosis can be obtained in about four fifths of the cases with only the usual x-ray examination such as posteroanterior, oblique or lateral films.—Merrill C. Sosman, M. D., *New England J. Med.*, June 1, 1950.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR MARCH 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During March 1950			March Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1946
Total live births	6840	**	**	26.0	24.7	26.4
Total stillbirths	178	**	**	25.4	24.9	34.5
Deaths, stillbirths excluded	2457	1378	1079	9.3	9.3	9.4
Infant deaths:						
under one year	289	130	159	42.2	41.8	42.3
under one month	177	92	85	25.9	26.1	28.0
Cause of Death						
Tuberculosis, 001-019	93	39	54	35.3	23.5	29.2
Syphilis, 020-029	21	5	16	8.0	7.6	11.1
Dysentery, 045-048	5	2	3	1.9		
Diphtheria, 055	1		1	0.4	0.4	0.8
Whooping cough, 056	1		1	0.4	0.8	3.4
Meningococcal infections, 057	3	2	1	1.1	0.8	1.5
Measles, 085	2	2		0.8	2.7	0.8
Malaria, 110-117					0.4	0.4
Malignant neoplasms, 140-200, 202, 203	207	157	50	78.6	88.4	83.7
Diabetes mellitus, 260	25	14	11	9.5	12.9	11.1
Pellagra, 281	2	1	1	0.8	1.5	3.1
Vascular lesions of central nervous system, 330-334	267	161	106	101.4	106.7	94.4
Other diseases of nervous system, 300-318, 340-398	39	13	26	14.8	16.7	7.7
Rheumatic fever, 400-402	3	2	1	1.1	2.3	2.7
Diseases of the heart, 410-443	717	441	276	272.2	282.4	235.3
Diseases of the arteries, 450-456	39	20	19	14.8	13.7	6.5
Other diseases of the circulatory system, 444-447, 460-468	33	16	17	12.5	13.3	4.2
Influenza, 480-483	61	34	27	23.2	11.0	15.4
Pneumonia, 490-493	140	70	70	53.1	47.8	59.1
Bronchitis, 500-502	5	2	3	1.9	1.9	3.4
Appendicitis, 500-553	4	2	2	1.5	2.7	1.5
Intestinal obstruction and hernia, 560, 561, 570	15	7	8	5.7	2.7	5.4
Gastro-enteritis and colitis, under 2, 571.0, 764	10	3	7	3.8	3.0	2.3
Cirrhosis of liver, 581	8	7	1	3.0	3.8	4.6
Diseases of pregnancy and childbirth, 640-689	6		6	8.5	25.4	18.2
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 682, 684	2		2	2.8	9.0	4.2
Congenital malformations, 750-759	22	14	8	3.2	3.4	3.5
Accidental deaths, total, 800-962	149	102	47	56.6	51.8	62.6
Motor vehicle accidents, 810-835, 960	61	44	17	23.2	22.6	20.3
All other defined causes	429	217	212	162.8	158.5	196.9
Ill-defined and unknown causes, 780-793, 795	150	45	105	56.9	58.0	68.7

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the March report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

AMERICAN MEDICAL ASSOCIATION NEWS

FOREIGN TUBERCULOSIS CONTROL PROGRAMS NOT APPLICABLE TO U. S., DOCTORS SAY

Widespread mass programs of BCG vaccination for tuberculosis carried out abroad are emergency measures not suitable at present for application in this country, two doctors of the U. S. Public Health Service find.

Writing in the July 22 Journal of the American Medical Association, Drs. Robert J. Anderson, medical director of the Division of Tuberculosis, and Dr. Carroll E. Palmer, medical director of the Field Studies Branch, both of Washington, D. C., say:

"Tuberculosis has become something of an emergency in many areas of the world, particularly in those countries directly affected by World War II. A multitude of shortages has made it impossible to employ the usual tuberculosis control measures.

"The adoption of BCG vaccination programs under those conditions is understandable. Emergency situations demand emergency action. On the other hand, we cannot view the justification of these programs as an argument to be blithely accepted for the widespread use of BCG in the United States."

BCG vaccine is a preparation of bovine tuberculosis bacilli (*Bacillus Calmette Guérin*) that have been grown over a period of years so that their virulence is greatly reduced.

"It must be recognized that we have a woefully incomplete knowledge of just what it is that is being used as BCG," the Public Health Service doctors point out.

Technical difficulties in attempting to standardize the vaccine have not been overcome, according to the article. Bacteriologists have commented that there is little uniformity in the number of living organisms in the several vaccines now being produced, as well as in different lots of the same vaccine. Even the life of the vaccine is a matter of conjecture.

"If liquid BCG vaccine were licensed today it would be the most unstable vaccine

so licensed in the United States," the doctors emphasize.

The basis for selection of persons eligible for vaccination is provided by the tuberculin test. Little is known as to what the appropriate tuberculin criteria are for selecting persons for a successful vaccination. There is even more uncertainty about what constitutes a successful vaccination than about who should be vaccinated, the doctors point out.

Another troublesome aspect of BCG administration is an apparent discrepancy about the continued effect of the vaccine. There is also considerable variation in opinion among experts on BCG as to the most efficacious method for administering the vaccine.

"A great deal of further research in the bacteriologic and public health aspects of the problem is necessary," the doctors conclude. "We feel that mass vaccination programs are warranted only for carefully documented evaluation studies. Whatever the use of BCG vaccination, no one should place reliance on it to the extent of relaxing the prosecution of accepted tuberculosis control methods for the protection of the community and the individual."

HARVARD PROFESSOR WINS AWARD FOR NUTRITION RESEARCH

Selection of Dr. Fuller Albright, associate professor of medicine at Harvard Medical School, Boston, as recipient of the 1950 Joseph Goldberger award in clinical nutrition has been announced by the Board of Trustees of the American Medical Association.

The award, made annually by the A. M. A. to stimulate research in nutrition, goes to Dr. Albright for his work in mineral metabolism and in human metabolism as influenced by the endocrine glands. It consists of a gold medal and \$1,000 in cash.

The award will be presented by the A. M. A. Council on Foods and Nutrition at a meeting some time in the fall. The meeting place has not been selected.

Dr. Albright is connected with the Massachusetts General Hospital, Boston. He received his A. B. degree from Harvard in 1921 and his M. D. degree from Harvard in 1924. His studies are known to the medical profession throughout the world.

The A. M. A. award was established in 1948 and named after the late Dr. Joseph Goldberger, who did pioneer work on pellagra in the southern states.

Last year's winner of the award was Dr. Randolph West of New York, whose nutritional investigations led eventually to the identification and clinical application of vitamin B₁₂. Dr. West died shortly before the award was to be presented. At his family's request, the money was used to establish the Randolph West lectureship at Columbia University.

LINK FOOT ERUPTIONS TO SHOE MATERIALS AND CONSTRUCTION

Rapid increase in foot eruptions has paralleled the use of certain materials, particularly waterproof materials, in manufacturing footgear, two Evansville (Ind.) dermatologists point out.

Writing in the July issue of *Today's Health*, published by the American Medical Association, Drs. L. Edward Gaul and G. B. Underwood say:

"Parents can learn something from instinctive actions of their children. Instead of calling their toe itch the fungus or athlete's foot and promptly rubbing in an irritating remedy, they should (like their children) kick off their shoes.

"The financial setbacks of the shoe industry in 1919 sent fabricators scurrying for cheaper materials. Time-proved leather was replaced by rubber and adhesives, by bonded, laminated, coated and impregnated fabrics and papers. Various plastics are now replacing these. The result is that we have steadily exposed our feet to a wide variety of chemicals."

Foot eruptions are the third most common skin disease, the doctors find. One survey indicated that three out of four people have foot eruptions. Careful studies by dermatologists have shown fungus to be the cause in approximately 50 per cent of cases.

"Certainly the rapid increase in foot erup-

tions paralleled the use of cheaper materials in manufacturing footgear, and particularly waterproof materials," the doctors say. "Tanners and processors have succeeded in destroying the natural porosity and absorbent properties of leather. Various chemicals highly irritating to the skin are added. Zealous manufacturers seal any porosity left in leather with moisture-resistant adhesives and cements.

"To make sure that none of the sweat from the sole can evaporate, beneath the insole is a bottom filler that seals out wet weather. Anything on hand that will not dissolve in water is used as filler. One combination consists of asphalt and a mass of cemented rubber, containing pieces of cork. These substances ooze up through tack holes and cracks and make the feet sweat, burn, itch and break out.

"Contact of an impervious material like rubber sheeting, plastic or painted leather with the skin is soon followed by an accumulation of moisture. This results from unconscious sweating. In hot weather the sweat increases. If the sweat cannot evaporate, the cooling effect of evaporation is lost and the skin heats up.

"An annoying burning sensation results. The skin swells, blood vessels dilate and the functions of the skin as a protective covering for the body are quickly lost. Then the chemical irritants in the shoes work their havoc. The feet burn, smart, itch, become reddened and soon break out. The thin skin between the toes is white and soggy, a warning that the shoes do not allow the sweat to evaporate.

"Investigators emphasize that fungi grow and thrive in moisture. Water-tight shoes provide ideal growth and multiplying conditions. Future footgear should take care of two basic needs: (1) rapid dissipation of sweat from the feet; (2) dryness in wet weather. Loose-fitting rubbers allow air movement around the shoes. This protection should be removed as soon as the wearer is in a dry place.

"Nature furnished us with a delicate alarm system for detecting irritations of the skin. Its warnings are itching, burning, stinging and swelling. If these symptoms appear, suspect your shoes at once. More severe warnings are redness, blisters and 'weeping.'"

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HISTORIC DELAYS IN THE APPLICATION OF KNOWLEDGE ABOUT THE HEART

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Boston

"Men were not all cowards before Agamemnon or all fools before the days of Virchow and Billroth," so said Oliver Wendell Holmes in 1878.

Today, in the middle of the twentieth century, we doctors are frequently boastful about our present medical knowledge and accomplishments without due heed and recognition of the important contributions of our ancestors in medical history. For several reasons it is well now and again to pause for a moment to look back as well as forward: in the first place, we acquire a better perspective of our own place in history with the humbling realization of our role as merely a link in the long chain of the acquisition and application of medical knowledge; secondly, we can ourselves learn things, sometimes long forgotten and as useful as new discoveries, by perusing the writings of physicians of bygone days; and finally, as is the case with history in general, the pursuit of medical history and the examination or collection of published landmarks of the past can be a source of the greatest pleasure and satisfaction, whether avocation or vocation. To illustrate these points I have chosen as my text for the Jerome Cochran Lecture a subject that I trust will interest you all, practitioner, teacher, and investigator alike, namely, "Historic Delays in the Application of Knowledge about the Heart." One might easily duplicate this lecture with reference to other organs and systems in the body but

my own knowledge allows me to speak authoritatively only about the circulation.

How can we account for most of the astonishing delays that have occurred in the application of our knowledge about the heart? Some reasons come quickly to mind, others are more obscure. Most important of all in ancient days was doubtless difficulty of communication; this still holds in two respects, namely, the barrier of language and the barrier of self imposed isolation of one part of the world from the other. The other difficulties of communication have been overcome by the introduction of printing in the first place, by the reduction in the expense and labor of printing that has come during the last one hundred years, permitting the production and distribution of many thousands of copies of a book or journal instead of a few hundred, by the change to the vernacular language from the Latin that was known to but few, by the expansion of education so that illiteracy has been sharply cut down and the number of reasonably well educated physicians increased, by the unbelievable improvement in facilities of travel by road, rail, sea, and air, by the less constant interruption of work by war, disease, and the ordinary hazards of life, by the less limited duration of human life which 100 years ago for the doctors as well as for others was but half of what it is today, by the academic interest only of many of the early discoveries or descriptions of cardiovascular abnormalities with no possibility at the time of the first writing of their practical application, and, finally, last but not least, by the great increase of the

number of persons who are interested in the subject of cardiovascular disease. This specialization which began in full force some 25 to 30 years ago has radically changed the situation so that it is very unlikely that there will be in the future such a large number of delayed applications of medical discoveries. The hazard now is rather the reverse; namely, too speedy an application of supposed discoveries, before their proper confirmation or adequate testing.

I propose now to speak of a dozen or more important facts about the circulation that required many years, and indeed, in some instances, even centuries before their application in medical practice. One of the most notable of all was the discovery of the circulation of the blood by William Harvey and his medical teachers in northern Italy. Slowly through the years it was accepted but strangely enough its practical application still lags far behind. Harvey himself recognized, in fact presented as major proof of his theory, the function of the blood vessels and particularly of the valves in the veins. And yet even to this day, over three hundred years later, the great importance to good health of maintaining a good peripheral circulation is inadequately appreciated. The heart is, to be sure, the essential pump but its work is hampered, and health, general and local, impaired by lack of attention to the accessory factors of the circulation. Good muscle tone in legs and arms helps to propel the blood in the veins back to the heart, the valves, when efficient, keeping it from leaking back. "The diaphragm, one of the most important muscles in the body when kept fit by proper exercise and freedom from the handicap of obesity, helps bring not only air into the lungs but also blood into the great veins in the thorax." Proper recognition of the fact that the state of the blood vessels can be just as important for health and longevity as is that of the heart has come slowly and needs further development.

Several other important pronouncements about the circulation came in the 17th century that received but scant recognition or at least application. One of the greatest medical scientists of his or any day was Richard Lower. I shall cite two discoveries of his which took 250 years to apply. In 1666 he announced the introduction of trans-

fusion of blood through tubes from one animal's artery to another animal's vein. This was in the year of the plague and great fire in London. Pepys mentioned it the next year in his diary. He wrote on November 14-15, 1667: "Here Dr. Croone told me, that, at the meeting at Gresham College tonight, which, it seems, they now have every Wednesday again, there was a pretty experiment of the blood of one dogg let out, till he died, into the body of another on one side, while all his own ran out on the other side. The first died upon the place, and the other very well, and likely to do well. This did give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop, and such like; but, as Dr. Croone says, may, if it takes, be of mighty use to man's health, for the amending of bad blood by borrowing from a better body." On November 21, 1667 he wrote as follows: "From this we fell to other discourse, and very good; among the rest they discourse of a man that is a little frantic, that hath been a kind of minister, Dr. Wilkins saying that he hath read for him in his church, that is poor and a debauched man, that the College¹ have hired for 20s. to have some of the blood of a sheep let into his body²; and it is to be done on Saturday next. They purpose to let in about twelve ounces; which, they compute, is what will be let in in a minute's time by a watch. They differ in the opinion they have of the effects of it; some think it may

1. The Royal Society, meeting at Gresham College.

2. "This was Arthur Coga, who had studied at Cambridge, and was said to be a bachelor of divinity. He was indigent, and 'looked upon as a very freakish and extravagant man.' Dr. King, in a letter to the Hon. Robert Boyle, remarks 'that Mr. Coga was about thirty-two years of age; that he spoke Latin well, when he was in company, which he liked, but that his brain was sometimes a little too warm.' The experiment was performed on November 23rd, 1667, by Dr. King, at Arundel House, in the presence of many spectators of quality, and four or five physicians. Coga wrote a description of his own case in Latin, and when asked why he had not the blood of some other creature, instead of that of a sheep, transfused into him, answered, 'Sanguis ovis symbolicam quandam facultatem habet cum sanguine Christi, quia Christus est agnus Dei' (Birch's 'History of the Royal Society,' vol. ii, pp. 214-16). Coga was the first person in England to be experimented upon; previous experiments were made by the transfusion of the blood of one dog into another."

have a good effect upon him as a frantic man by cooling his blood, others that it will not have any effect at all. But the man is a healthy man, and by this means will be able to give an account what alteration, if any, he do find in himself, and so may be usefull." Finally, on November 29-30, 1667, Pepys ended his notations about transfusion with the following remarks: "But here, above all, I was pleased to see the person who had his blood taken out and sheep's blood put in. He speaks well, and did this day give the Society a relation thereof in Latin, saying that he finds himself much better since, and as a new man, but he is cracked a little in his head, though he speaks very reasonably, and very well. He had but 20s. for his suffering it, and is to have the same again tried upon him: the first sound man that ever had it tried on him in England, and but one that we hear of in France, which was a porter hired by the virtuosos." Unfortunately, lack of knowledge about blood groups and about the incompatibility of the blood of one species for that of another resulted in failure of this brilliant idea and over two centuries elapsed before its practical application.

Lower also, a few years later (1669), described cases of cardiac compression, acute and chronic, by pericardial effusion (cardiac tamponade) and by thick constricting adhesions, respectively, but again centuries elapsed before others took up the idea or tried to put it into application. Vernay in 1856 performed the first pericardial paracentesis; and although Chevers in 1842, Wilks in 1870, and Pick in 1896 again described the syndrome of chronic constrictive pericarditis, it wasn't until 1898 that Delorme in Paris advised pericardial resection and years later (1913) that Sauerbruch actually performed the operation.

In 1679 Theophile Bonet published in his *Sepulchretum* the first large collection of autopsy protocols which remains the source book of first descriptions of gross pathological lesions and of their relationship to symptoms. Thus, the connection between calcareous aortic stenosis and sudden death was clearly pointed out, to be emphasized again in our own generation, as well as the relationship of cardiac enlargement to dyspnea, the explanation of which required centuries to clarify. Even more interesting was

Bonet's report in the second edition of his *Sepulchretum* in 1700 of the case of a fat poet whose death came within a few minutes of some exercise after a hearty meal and who showed at autopsy almost complete occlusion of a major coronary artery. And yet 68 years later even Heberden who, for the first time, identified angina pectoris was not aware of its association with coronary artery disease. An interesting delay of 20 odd years occurred in this connection between the rediscovery in the 1770's of the seriousness of extensive coronary arterial sclerosis by Jenner of smallpox fame and the publication thereof in a letter of his by Parry in 1799 in the book entitled "*Syncope Anginosa*." The chief reason for this particular delay was Jenner's reluctance to worry his friend, the famous surgeon John Hunter, who developed angina pectoris about the time of Jenner's discovery and survived some 20 years longer.

More surprising still was the 212-year delay between Bonet's description of fatal coronary artery narrowing and Herrick's classical description of the clinical syndrome of acute coronary thrombosis with myocardial infarction. Despite good descriptions of myocardial infarcts by pathologists such as Marie during the nineteenth century, the ablest clinicians interested in heart disease, including Sir James Mackenzie and Sir William Osler, failed to recognize acute myocardial infarction as a clinical entity. And also surprising was the fact that even as recently as a generation ago there was a lapse of close to a decade between the time that Herrick presented his paper before the Association of American Physicians at Atlantic City and its application by the great majority of the very professors and other internists who attended the meeting; only a few months ago Dr. Herrick told me himself that he has always been puzzled to explain this particular lag.

Further development of our knowledge of coronary heart disease has come very slowly, partly due apparently to the fatalism with which it was for so long regarded, partly because of lack of persons adequately interested, and partly because of the intrinsic difficulty of the problem. Even the prognosis was inadequately studied and its variability unexplained until the vital demonstration of the development of a col-

lateral coronary circulation by Blumgart and Schlesinger in 1940.

Let us go back again now to the early years of the eighteenth century and to several leading medical pioneers of that age. Lancisi in 1707 wrote a book on Sudden Death, the only scientific one, I believe, ever written, and dedicated it to Pope Clement XI, whose physician he was. In this volume he advised postmortem examination to discover the physical causes of death in an effort to combat the current superstition of supernatural death. In relatively recent times there has been a revival of interest in the incidence of the causes of sudden death, as in the two coroners' series of 2,000 and 2,030 cases of Martland and Helpner, respectively. In all these series, of course, cardiovascular diseases play the leading role. Incidentally, it is of much interest that the Pope himself, representing the stand of the Church, not only gave authoritative approval to the performance of autopsies, but indeed urged their adoption more than 200 years ago. Lancisi, the Pope's physician, was a remarkable man, a scientist and writer of note both on medical and on non-medical subjects. One of his contributions, which was named after him for awhile but later forgotten and rediscovered or at least re-emphasized as a clinical sign by James Mackenzie two centuries later, and which appeared in a posthumous book on the heart in 1728, was engorgement of the neck veins with enlargement and dilatation of the right ventricle.

In the same year, 1707, that Lancisi's book on Sudden Death was published in Rome, a volume entitled *The Pulse Watch* by Sir John Floyer appeared in London. In this book Floyer advised the medical use of a principle that was ignored for many decades and even now is not yet well recognized, namely, that normal standards of measurement of the human body based on known data such as height, weight, age, and sex are inadequate. He advised persons to count their pulse rates while still in good health so that they would be able when ill to tell their physicians their normal pulse rates for comparison with the rates during sickness. This procedure should apply today to many body measurements and tests, such as body temperature, blood pressure, basal metabolic rate, size of heart shadow

by x-ray, vital capacity, and electrocardiogram. I am constantly asking my new patients if they have their normal data for comparison with what I find when they come to see me when ill; infrequently do they have such valuable information.

In 1715 another medical pioneer, a Frenchman named Raymond Vieussens, published a treatise on the heart and some of its abnormalities, 30 years after his first great work on the nervous system. In this book there is an excellent description of the dyspnea occurring with severe mitral stenosis and a clear explanation of its mechanism due to the valvular obstruction, yet even to this day for some reason or other there is a common tendency of the medical profession to ascribe such dyspnea to heart muscle failure and sometimes to treat it wrongly. The operation of anastomosis of a pulmonary vein with the vena azygos recently introduced by Sweet and Bland is the first satisfactory effort to relieve the pulmonary vascular engorgement in tight mitral stenosis by establishing a safety valve.

Sphygmomanometry, which, in our generation, has become such a simple routine procedure, took a long time to develop after the first blood pressure measurement was made on a mare by the English parson, Stephen Hales, in 1733. The delay of more than 150 years was doubtless due to the lack of knowledge and of interest of any person ingenious enough to invent a simple technic that could apply to man.

The first volume that can justifiably be called a clinical textbook on heart disease was that by Senac published in 1749. Here really useful therapy began to emerge, including the use of opiates and venesection for acute pulmonary edema, of mercury as a diuretic, and of quinine in rebellious palpitation. It is this last named procedure that fits our text today. Who it was that introduced quinine for cardiac arrhythmia over 200 years ago I do not know; I doubt if it was Senac himself for he doesn't write as if he were the discoverer of that practical treatment. The actual person responsible may never be known. Perhaps it was a patient who simply told his doctor that while he was taking quinine for malaria his heart did not palpitate so much and his doctor simply told other doctors, including Senac, for in those days most news was passed on

by word of mouth, the printed word being too costly and difficult a method of communication in the case of 95 or more per cent of all instruction and information. As a matter of fact, when Senac's writings were read no longer and people lost faith in quinine therapy of cardiac arrhythmia, for it often fails to work, it was actually a patient who rediscovered its value a century and a half later. In 1914, Wenckebach, the great European internist, a modern pioneer in the study of the pulse (Galen was the great pioneer of antiquity), wrote an article about the abolition of auricular fibrillation by quinine demonstrated to him by a patient. This article was published in German during the first World War and so did not attract the attention of the English speaking world. A German pharmacologist named Frey at Kiel did read the article and tested in turn all four alkaloids of the cinchona bark; he wrote in 1917 of the superiority of quinidine over quinine, but, because of the war, several more years supervened before we over here began to try quinidine, which has turned out to be one of the most useful drugs in the armamentarium of the cardiologist of 1950.

Twelve years after the appearance of Senac's work, there was published in Vienna a thin little book on a new technic of examination, the first special method of study to be added to the old custom of general inspection, palpation, urinoscopy, and feeling the pulse. Auenbrugger, the young son of a wine merchant, introduced percussion in this way in 1761 to help to discover fluid in the pleural or pericardial cavities and enlargement of the heart. This short treatise, written in Latin, was, however, ignored, despite an early French translation, until Corvisart, Napoleon's physician, translated it again with comments, and emphasized its value in 1808, 47 years later. Happily Auenbrugger was still alive to receive the belated plaudits of the medical world. Today in 1950 it is unhappily a common custom to neglect the technic of percussion because of the availability of x-ray instruments and eventually we may need to rediscover its value.

Now I shall mention a book that very few persons have ever seen or heard of but which presented pioneer work on the cardiac nerves. In 1772 a physician named Neubauer published an excellent description

of the sympathetic nerves and ganglia in neck and thorax with illustrations, nearly a hundred and fifty years before they came to the attention of the medical world at large with the introduction of technics of injection and transection for angina pectoris and other thoracic disorders. There had been only crude descriptions before that date. At the time of Neubauer's book these nerves were largely of academic interest only, which probably explains the long delay in this instance. Indeed I should have mentioned in my introductory remarks this additional reason for delay in the application of knowledge about the heart.

In the year when the American Revolution began, a patient with heart failure in Birmingham, England, made an important medical discovery. She had consulted the famous William Withering, expert in internal medicine and botany, but received no help from him. Having heard of an old woman in Shropshire who had a family recipe for the dropsy she went to see her and was greatly benefited. She had the good sense to go back to tell Dr. Withering of her experience and he had the good sense to accept her advice to look into the matter. He visited the old woman, learned from her (he doesn't say how) the composition of her recipe, and soon discovered which of the plants from her herb garden was the essential one. This was the purple foxglove which, together with the lutea variety, had been introduced into medical practice as an emetic by Fuchs in 1542, 233 years earlier. That was a long gap in itself, due I suppose to the fact that nobody had taken the digitalis earlier in small enough dosage to be obviously improved in heart action, or perhaps it had not been considered good sense to prescribe an emetic for a person with dropsy.

There are two more delays in the application of digitalis to heart failure that are of special interest. The first was 10 years long and very wisely utilized by Withering in clinical tests with the drug before he felt justified in giving exact information as to its use. In 1785 he finally published his Account of the Foxglove in which he gave detailed instruction as to dosage and otherwise. Unfortunately, apparently very few persons followed his directions. The drug was tried for all sorts of febrile diseases, like

tuberculosis, and found ineffective; this resulted in its gross neglect and it was not until the beginning of the twentieth century, 125 years or more later, that the medical profession began to follow again Withering's therapeutic advice with good results. Incidentally, the recent vogue of the use of purified extracts (glycosides) from digitalis leaf in this country (which I hasten to add is quite all right though not so essential as some believe) is itself a hundred years late. Nativelle, in 1845 in France, introduced digitalin, called digitaline by him and all sorts of trade names over here of late, such as purodigin and crystodigin. In the great majority of cases of myocardial insufficiency one can follow with confidence even today Withering's original directions.

In 1777 Sandifort wrote an excellent description of the blue baby with the tetralogy of Fallot, 111 years before Fallot and 105 years after a less complete description by Stensen. Many others, including Farre in 1814, Gintrac in 1824, and Peacock in 1858, also described this tetralogy before Fallot, but the Marseilles physician deserves the credit for having put the condition on the clinical map, as did Herrick for acute coronary thrombosis which had been repeatedly described by pathologists long before Herrick's paper appeared. And of course Fallot's tetralogy did not have much more than academic interest until Blalock and Taussig introduced their spectacular surgical treatment for it in 1945, which explains its relative neglect for so many years.

Now let us proceed to the nineteenth century during which the microscope opened up new worlds for medicine in bacteriology, hematology, histology, and pathology, and anesthesia and antisepsis made surgery a specialty, and Roentgen invented the x-ray tube. A young Frenchman, Laennec, who was destined to die at an early age of tuberculosis, was confronted in 1816 by a stout female patient whose chest he wished to examine by auscultation, a technic which was infrequently practiced in those days, largely because of the inconvenience and immodesty of the direct method. Ingeniously he made a tight roll of paper, applied one end to the chest and the other to his ear, and to his delight heard the heart sounds quite well. He constructed soon thereafter his famous monaural wooden stethoscope

and published an account of it, together with a treatise on mediate auscultation of the thorax, in 1819. His stethoscopes were sold in Paris at the bookstore for 2 francs apiece. A good many years elapsed, however, before the stethoscope came into general use. Even Oliver Wendell Holmes derided it 30 years later in his famous ballad, although I have myself read some of the case records of patients under his personal care and in his own handwriting in whom he occasionally reported hearing murmurs (bruits) when he was one of the two physicians attending the patients at the Massachusetts General Hospital during the years of his appointment there from 1846 to 1850, a century ago. One reason for the delay in the practical use of Laennec's stethoscope was the very fun that was poked at it, as in Holmes' ballad itself:

THE STETHOSCOPE SONG A Professional Ballad

There was a young man in Boston town,
He bought him a stethoscope nice and new,
All mounted and finished and polished down,
With an ivory cap and a stopper too.

It happened a spider within did crawl,
And spun him a web of ample size,
Wherein there chanced one day to fall
A couple of very imprudent flies.

The first was a bottle-fly, big and blue,
The second was smaller, and thin and long;
So there was a concert between the two,
Like an octave flute and a tavern gong.

Now being from Paris but recently,
This fine young man would show his skill;
And so they gave him, his hand to try,
A hospital patient extremely ill.

Some said that his *liver* was short of *bile*,
And some that his *heart* was over size,
While some kept arguing all the while,
He was crammed with *tubercles* up to his eyes.

This fine young man then up stepped he,
And all the doctors made a pause;
Said he,—The man must die, you see,
By the fifty-seventh of Louis's laws.

But since the case is a desperate one,
To explore his chest it may be well;
For if he should die and it were not done,
You know the *autopsy* would not tell.

Then out his stethoscope he took,
and on it he placed his curious ear;
Mon Dieu! said he, with a knowing look,
Why here is a sound that's mighty queer.

The *bourdonnement* is very clear,—
Amphoric buzzing, as I'm alive!
Five doctors took their turn to hear;
Amphoric buzzing, said all the five.

There's *empyema* beyond a doubt;
We'll plunge a trocar in his side.—
The diagnosis was made out,
They tapped the patient; so he died.

Now such as hate new-fashioned toys
Began to look extremely glum;
They said that rattles were made for boys,
And vowed that his *buzzing* was all a hum.

There was an old lady had long been sick,
And what was the matter none did know:
Her pulse was slow, though her tongue was
quick;
To her this knowing youth must go.

So there the nice old lady sat,
With phials and boxes all in a row;
She asked the young doctor what he was at,
To thump her and tumble her ruffles so.

Now, when the stethoscope came out,
The flies began to buzz and whiz;—
O ho! the matter is clear, no doubt;
An *aneurism* there plainly is.

The *bruit de rape* and the *bruit de scie*
And the *bruit de diable* are all combined;
How happy Bouillaud would be,
If he a case like this could find!

Now, when the neighboring doctors found
A case so rare had been descried,
They every day her ribs did pound
In squads of twenty; so she died.

Then six young damsels, slight and frail,
Received this kind young doctor's cares;
They all were getting slim and pale,
And short of breath on mounting stairs.

They all made rhymes with "sighs" and "skies."
And loathed their puddings and buttered
rolls,
And dieted, much to their friends' surprise,
On pickles and pencils and chalk and coals.

So fast their little hearts did bound,
The frightened insects buzzed the more;
So over all their chests he found
The *rale sifflant*, and the *rale sonore*.

He shook his head;—there's grave disease,—
I greatly fear you all must die;
A slight post mortem, if you please,
Surviving friends would gratify.

The six young damsels wept aloud,
Which so prevailed on six young men,
That each his honest love avowed,
Whereat they all got well again.

This poor young man was all aghast;
The price of stethoscopes came down;
And so he was reduced at last
To practice in a country town.

The doctors being very sore,
A stethoscope they did devise,
That had a rammer to clear the bore,
With a knob at the end to kill the flies.

Now use your ears, all you that can,
But don't forget to mind your eyes,
Or you may be cheated, like this young man,
By a couple of silly, abnormal flies.

Another reason for the delay in the introduction of routine mediate auscultation was probably the crippling illness and early death of the inventor, Laennec; a third the slow process in those days of the actual manufacture of the instrument, and a fourth its awkwardness and inadequacy in contrast to the comfortable and much more efficient binaural stethoscope that we use today. I would like to add, however, that there were in other countries early allies of Laennec who urged the introduction of mediate auscultation; in particular, John Forbes who translated his book into English and the Irishman William Stokes who published a little known treatise in 1825 at the age of 21, thirty years before his well known textbook on the heart.

In the 1830's there were three English physicians who made important comments concerning the heart that went unheeded for many decades. One was Hope who in 1832 defined cardiac asthma as the result of bronchiolar constriction superimposed in certain individuals on congestion of the pulmonary circulation due to heart disease and failure, a concept that was rediscovered in our own day. The second was John C. Williams who wrote in 1836 of the great frequency of nervous palpitation and functional arrhythmia not due to organic heart disease, a healthy acceptance of some of the teachings of Galen and others of antiquity with their four humors which had been too completely given up by Williams' immediate predecessors and contemporaries, in particular Corvisart. A good many more years, however, passed before DaCosta, Lewis, and Oppenheimer and his associates identified neurocirculatory asthenia as a clinical entity, which required recognition during both World Wars, even though the fundamental cause still eludes us. The third pioneer in the thirties was Richard Bright who, in 1836, described cardiac enlargement accompanying kidney disease; this was still called "nephritic" by Richard Cabot in

1914 and only since about 1925 has it been recognized as hypertensive, a suggestion made, however, by Gull and Sutton in 1872.

One of the most interesting delays in the application of our knowledge about the heart has been in the field of cardiac electricity. In Bologna in Italy there is a famous statue of Galvani with his frog. At the turn of the eighteenth century into the nineteenth he demonstrated the stimulating effect of the discharge from an electric fish (torpedo) upon the nerve of a frog's gastrocnemius muscle. In 1855 Kolliker and Muller measured the current of the heart action by the crude capillary electrometer of the day, and it was this same instrument with which, in 1878, Sanderson and Page developed the study of the electrocardiograms of laboratory animals and with which, in 1889, Waller recorded the first human electrocardiogram, which interestingly enough, was a chest lead with electrodes attached to precordium and to the back. Laboriously Bayliss and Starling studied the human electrocardiogram in the physiological laboratory but it was not until 1903 that the future of clinical electrocardiography became assured through the invention of the string galvanometer by Einthoven. Although a physiologist, he quickly fostered and himself carried out clinical tests with the new technic in the case of cardiac patients.

Unfortunately, however, the matter of convenience led to the adoption of the so-called classical bipolar limb leads and to the empiricism that followed for several decades until early in the 1930's Wilson, and Wood and Wolferth steered us back to scientific electrocardiography by the adoption of precordial leads, and Mann, Duchosal, and others by the introduction of vectorcardiography. In this slow 150-year evolution the tedious development of new apparatus and technics, a certain amount of blind chance (as in the case of the use of the limb leads which so quickly supplanted the original chest leads), and the lack of enough scientific enthusiasts and specialists were the responsible factors. It is of interest that in my earliest days in the process of learning something special about cardiovascular disease I was warned that the electrocardiograph was a useless toy and cardiology a narrow specialty. However, it was quite evident that specialization must come to

stay and that it need not be narrow if our attitude and course could be wisely directed. Now electrocardiography has become a very important and useful specialty in itself and the field of heart disease appallingly broad.

One of the most useful therapeutic measures in my experience has been the prophylactic use of the nitrites, in particular nitroglycerine in small dosage, 1/200 grain or less, in cases of moderately severe or obstinately recurrent or even ordinary angina pectoris. By its free use in this way as well as in immediate treatment, I have kept many patients comfortable and perhaps even still alive, and have reduced the number of those referred for sympathectomy or other radical therapy to a very small minimum. Even some instances of transient heart block due to coronary disease have been so relieved. And yet it is surprising that this use of the nitrites, which is still not widely recognized or practiced, has been so long delayed after the introduction of the nitrites by Lauder Bruton in 1867 and by Murrell in 1879, which supplanted the inferior effect of spirituous liquors in use since the classical description of angina pectoris by Heberden a century earlier.

Another fascinating delay in our application of knowledge has been in the matter of diets. The situation was so confused by so many advocates of all kinds of diets a generation ago that most of us, I believe, were quite content to let what we considered well enough alone and advised merely a simple palatable light diet avoiding large meals, many calories, rich and highly spiced foods, and excessive salt and fluids. Once in a while we would order effectively for a day or two in the case of a dropsical patient the Karell diet introduced in Russia in 1866; we attributed the improvement that so often followed to the lack of fluid and of energy needed to digest the 800 cc. of skimmed milk which constituted the total daily diet. And we didn't then read the important critical observations of Widal and Lemierre who, in 1903, clearly showed that it was limitation of sodium chloride and not of fluid that resulted in diuresis and in protection against the reaccumulation of edema. Forty years or more went by after Widal and Lemierre's notable paper before the medical profession awoke to the importance of sodium restriction in congestive heart failure despite addi-

tional observations of its value in the meantime by Allen in 1920 and Barker in 1932. It was the more widespread reports of Schroeder in 1941 and Schemm in 1942 that finally aroused many of us to the great importance of this dietary principle and that fluids could be given freely or even forced in some instances to advantage. Why the long delay after Widal and Lemierre's pioneer paper? Probably inertia and for the English speaking world the fact that the article was published in French, an unjustifiable reason, of course.

As I said in my introduction it is not likely that in the future, for many reasons, there will be long delays in the application of new medical knowledge. And yet even now there are instances of bright ideas or even proven facts that require years for their implementation. One such that came to my notice only a few days ago was a most interesting suggestion in a brief paper by my good friend Sam Levine. He wrote an article in 1933 on the subject "A Clinical Conception of Rheumatic Heart Disease" printed in the American Heart Journal. He wrote as follows: "Recognizing the great importance of continued study of the bacteriological aspects of the question, there is another phase of the problem that I feel has not received sufficient attention. I refer to the condition of the host or patient, the internal environment in which the disease develops, and especially the possible role the glands of internal secretion may be playing . . . The term 'growing pains' attains more than colloquial significance when it is viewed in the light that the rheumatic pains disappear and the disease is held in check when the proper endocrine balance, possibly determined in this instance by the pituitary gland, has been established." And now this prophecy of Levine's has come true with the proof, at least in some cases, within the last year of the curative effect of adrenocorticotrophic hormone (ACTH) of the pituitary gland in acute rheumatic fever. Apparently during the decade and a half that intervened his idea lay unheeded even by those concentrating on rheumatic fever.

Thus we come to midcentury with the realization that we must be forever on the alert to watch and to listen for new suggestions, facts, and ideas that may afford us much help in our growing struggle

against cardiovascular disease in youth, in the middle years, and in early old age. We may indeed, as I have pointed out to you today, profit by reading or rereading some of the sage observations and advice of our medical forbears, wise perhaps before their times. As James Russell Lowell said:

"Tis man's worst deed

To let the things that have been run to waste."

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CONGENITAL MALFORMATION OF THE HEART

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To those of us who practice in the field of pediatrics the subject of congenital malformation of the heart has always been of interest. In the past few years such marvelous and almost miraculous techniques have been developed in diagnosis, anesthesia and surgery that it behooves all of us to become more familiar with the recognition of the anomaly and the basic factors underlying it.

We owe most of our present knowledge of this subject to two great women physicians. From a pathological standpoint, Dr. Maude E. Abbott's report and classification of one thousand autopsies of congenital heart disease is a monumental work. From the clinical and practical standpoint, Dr. Helen B.

Taussig has given to the medical profession and to the world an amazing insight into the diagnosis of congenital heart disease. Her book, "Congenital Malformations of the Heart," published in 1947, is a great contribution to medical literature. It will probably always remain "the Bible" to students of this subject.

In this short report the embryology of the heart will not be discussed except to state that it begins to form in the third week of pregnancy and by the eighth week of intra-uterine life it has assumed the adult configuration. Therefore, virus infections such as German measles must occur early in pregnancy to cause an anomaly.

To state that an infant has a congenital malformation of the heart is easy but to determine the exact type and whether or

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not surgery is indicated requires careful study and sometimes the use of many technical procedures. In the young infant, diagnosis is very difficult. As the child grows older, murmurs become more typical, the position of the heart less horizontal, and configuration more stable so that accurate diagnosis becomes somewhat less difficult. In the majority of cases of congenital malformation of the heart a systolic murmur is usually heard to the left of the sternum and at the base of the heart. In infants the character and the quality of the murmur are of little diagnostic significance. The second sound normally is split. If the second sound is unusually clear and distinct it may mean that one of the great vessels is stenosed or absent and only one set of semilunar valves is closing. It is best to listen to the child's heart when he is asleep or lying quiet. Murmurs are often louder in different positions. In patent ductus arteriosus the murmur is more distinct when the child is prone. Changing positions helps to rule out functional murmurs and venous hums. It is advisable to listen before and after exercise. The entire chest and neck should be palpated carefully for thrills and abnormal pulsations.

In children suffering from severe anemias all types of murmurs may be heard; therefore, the physician must not be too ready to diagnose some condition such as rheumatic heart disease, congenital malformation or bacterial endocarditis in the presence of severe anemia.

Congenital malformations of the heart are divided roughly into two main groups: those with cyanosis, so-called "blue babies," and those without cyanosis. Dr. Taussig lists thirteen various types in the cyanotic group and sixteen various types in the non-cyanotic group. In infants under two years of age the most common types in the cyanotic group are (1) transposition of the great vessels, (2) the tetralogy of Fallot, (3) tricuspid atresia, and (4) truncus arteriosus. These four are easy to remember as they all start with T.

Infants who have very rapid respiration without definite pulmonary findings should be suspected of having some congenital heart lesion. Often infants who have cyanosis and anoxemia are subject to attacks of paroxysmal dyspnea. At the onset some of

these may cry out as if in severe pain then become more deeply cyanotic and gasp for breath. Some even lose consciousness during these attacks. The attacks may be precipitated by the exertion of feeding or bowel movement. When these attacks occur the infant should be turned on the abdomen in the knee chest position, and given oxygen and morphine, one milligram to ten pounds of body weight. In severe cases three-fourths of this dose should be given intravenously. Morphine is almost specific in these cases.

Seven types of congenital malformation of the heart and great vessels have been treated successfully by surgery and work is being done on other types both congenital and acquired. When confronted with a case of congenital malformation of the heart some of the questions that must be answered are as follows: (1) What vessels or chambers of the heart are enlarged, diminished or absent? (2) Is the blood supply adequate as to oxygen and nutrition? (3) Are the great vessels present and in their normal relationship? (4) Do we have a mixture of venous and arterial blood? (5) Is the venous return normal? (6) Is the blood supply to the lungs too little or too much? (7) Is heart failure present? (8) Is acquired heart disease superimposed, such as rheumatic or subacute endocarditis? To answer these questions the following methods of diagnosis are used: (1) The history—onset, cyanosis, syncope, and squatting. (2) Physical examination—special attention to stunting, pulse, blood pressure in arms and legs, visible vessels or pulsations, distribution of cyanosis, and chest deformities. (3) X-ray and fluoroscopic examination in the anterior-posterior, left anterior oblique and right anterior oblique positions, with barium swallows. (4) Electrocardiographic studies. (5) Laboratory: The red blood cell count, hemoglobin, the hematocrit, sedimentation rate, blood cultures, and arterial oxygen saturation. If the foregoing methods are thoroughly done and a careful study is made, a large percentage of the malformations of the heart can be correctly diagnosed. In some cases special methods of diagnosis must be resorted to: (1) Determination of the circulation time. (2) Analysis of the expired air before and after exercise. (3) Catheterization of the heart and great vessels, with analysis of

blood samples of the various chambers and the measurement of the pressure in various chambers and vessels. (4) Angiocardiography. Rapid injection of Diodrast with multiple x-rays.

Fluoroscopic examination is probably the most valuable means of arriving at a correct diagnosis. By examining the children in various positions, such as anterior-posterior, left anterior oblique and right anterior oblique, considerable information can be gained concerning the size and shape of the various chambers of the heart and the position and size of the great vessels; whether the lung fields are clear or cloudy; whether hilar pulsation is absent or present. By giving barium and watching the course of the esophagus, information can be obtained concerning the position of the aorta and the size of the auricles.

In approximately twenty-five per cent of the cases of the tetralogy of Fallot there is a right aortic arch. The surgeon must know this as he usually operates on the side opposite the aortic arch.

At the present time the types of congenital malformation of the heart amenable to surgery are as follows: (1) patent ductus arteriosus, (2) coarctation of the aorta, (3) the tetralogy of Fallot, (4) tricuspid atresia (some cases), (5) truncus arteriosus (some cases), (6) pulmonary stenosis (rare), and (7) double aortic arch.

The diagnosis of patent ductus arteriosus is the only congenital cardiac malformation which can almost be made with a stethoscope and physical examination alone. Normally, in infants, the ductus functionally closes soon after birth. However, it does not anatomically close until about four months of age. In infants the pressure in the right and left sides of the heart is about equal; therefore, they are often three or four years old before a continuous murmur is heard. A typical murmur of patent ductus arteriosus is a so-called "machinery-like" murmur, a continuous hum, such as that in arteriovenous aneurysm. This murmur is always heard best in the prone position and in the second left interspace. Also the thrill is palpable in this area. These children generally have a slightly elevated systolic pressure and a low diastolic pressure, giving a wide pulse pressure. After exercise occa-

sionally the pulse pressure is widened so that the diastolic pressure drops to zero. This wide pulse pressure helps to differentiate the condition from interauricular septal defect as in the latter the pulse pressure is usually narrow.

Dr. Robert Gross was the first man to tie off successfully a patent ductus arteriosus. He has also estimated that approximately forty per cent to as high as seventy per cent of the blood pumped up the aorta is shunted back through the ductus thus putting a tremendous load on the heart. Some children with a small patent ductus show no evidence at all of any heart trouble. Others who have a large ductus with a large volume of blood being shunted back become fatigued easily, are short of breath and usually show some stunting in growth.

The systolic component of the murmur in patent ductus arteriosus may be transmitted fairly widely. However, the diastolic component is heard only in a small area in the second left interspace. There is usually an accentuation of the pulmonic second sound.

On x-ray and fluoroscopic examination the heart may be of various shapes and sizes; however, the usual picture is as follows: The lung fields are often cloudy due to an excess of blood. There is usually a prominent pulmonary conus and marked hilar pulsations. In the right anterior oblique position the pulmonary conus becomes more prominent. The electrocardiogram is normal as a rule. The laboratory findings are in most instances normal. The complications are (1) subacute bacterial endocarditis and (2) heart failure. Many men feel that surgery should be done if a diagnosis is made, particularly if the heart is enlarged, the child is stunted and if the pulse pressure is very wide. Of course, if subacute bacterial endocarditis has already developed, the operation should be done.

With respect to coarctation of the aorta, there are two types: the infantile type, in which the coarctation is proximal to the ductus, and the adult type in which coarctation is distal to the ductus. It is rare for a child with the infantile type to live beyond the age of one month. Coarctation of the aorta is the easiest of all the malformations to diagnose. This condition should be considered when a physical examination is done. By merely feeling for the femoral

pulse a diagnosis can be made. Absence of the femoral pulse on both sides is definite indication that coarctation of the aorta is present. In addition to absent femoral pulsation, increased blood pressure is found in the upper extremities and a diminished or absent blood pressure in the lower extremities. Whereas patent ductus arteriosus is more common in females, coarctation of the aorta is more common in males. Children with this condition are usually rather husky, well built individuals and develop early sexually. Occasionally such symptoms as headache, palpitation, weakness and dyspnea are present. They complain that their legs go to sleep easily. A fluoroscopic examination usually reveals a small or absent aortic knob. There is sometimes left ventricular enlargement and notching of the ribs in cases over fifteen years of age. The notching of the ribs is due to a tremendous enlargement of the intercostal arteries, and the constant beating against the ribs causes a notching of the ribs seen in x-rays of older children and adults. The electrocardiogram frequently shows left axis deviation. There are no particular laboratory findings except occasionally a disturbed kidney function. Complications of coarctation of the aorta are subacute bacterial endocarditis, heart failure, cerebral hemorrhage and rupture of the aorta. Many cases of coarctation of the aorta are not discovered until adulthood or even at the autopsy table. Some of these patients live to be forty or fifty years old or more. The danger of complications definitely indicates surgery when this condition is discovered. Pertinent to the discussion of coarctation of the aorta it is advisable to mention two anomalies, namely, a double aortic arch and occasionally the trachea and esophagus are caught in a circle because of a right aortic arch with a ductus crossing to the pulmonary artery. These infants have a wheeze or whistle and are subject to repeated respiratory infections. Sometimes they are treated for asthma, enlarged thymus and breath holding. In severe cases these children have difficulty in swallowing and they strangle easily. The condition is recognized by considering it and by doing barium studies. Occasionally an adult with this condition develops arteriosclerosis and will have painful and difficult swallowing.

In the cyanotic group the most common

type amenable to surgery is the tetralogy of Fallot. Dr. Alfred Blalock, Professor of Surgery at Johns Hopkins, was the first to treat this type of case with surgery and for his outstanding work he was presented the Randolph Matas award for the best work on vascular surgery in 1949. Later, similar types of operations have been devised by Potts and others. The most common type of so-called "blue babies" is the tetralogy of Fallot. In this condition we have an absence of, or stenosis of, the pulmonary artery, an overriding aorta, a ventricular septal defect, and an enlarged right heart. Children who suffer from this condition have a habit of squatting to rest. They are also short of breath and are subject to attacks of syncope. They show cyanosis, clubbing of the fingers and toes, and stunting of growth. Under the fluoroscope, in infants, the heart gives a typical boot shape with a narrow waist, there is an absence of hilar pulsations, the lung fields are clear, the right ventricle is enlarged in the right anterior oblique position, and in the left anterior oblique position the pulmonary window is clear. Twenty-five per cent or more show a right aortic arch. The electrocardiogram shows right axis deviation. The laboratory examinations reveal an increased red blood count, sometimes as high as nine to twelve million, and an increased hematocrit. There is decreased arterial oxygen saturation. At surgery a decreased pulmonary artery pressure is found. These children do not die of heart failure usually but of cerebral thrombosis and anoxemia due to the increased red blood count and the lack of oxygen. It is extremely important not to let these children become dehydrated since, as the count goes up, the danger of thrombosis is more imminent. The Blalock-Taussig operation used in cases of tetralogy can occasionally be used in cases of truncus arteriosus, pure pulmonary stenosis, and in cases of tricuspid atresia with non-functioning right ventricle. The urgency and immediate need of operation is usually decided by the oxygen arterial saturation and the general condition of the patient.

SUMMARY

Some of the congenital heart malformations amenable to surgery and the methods used to diagnose them are briefly described.

In the cyanotic group, even with all the methods at our command, an accurate diag-

nosis cannot always be made. In general, the cases which show clear lung fields and absence of hilar pulsations, with normal size or slightly enlarged heart, can be considered as surgical prospects. The degree of oxygen saturation of the arterial blood determines whether or not it is a surgical emergency. The normal oxygen saturation is ninety-five to ninety-seven per cent. The venous arterial saturation is seventy-two per cent. Children showing an arterial oxygen saturation as high as seventy per cent can be benefited

by surgery. Those with an oxygen saturation of fifty to sixty per cent can be greatly helped and those with oxygen saturation below forty per cent are surgical emergencies. The cases which show cyanosis, plus congested lung fields, plus large pulmonary vessels, and marked hilar pulsations cannot be helped by surgery at the present time.

In the non-cyanotic group: The type cases which can be treated surgically are fairly easy to diagnose. Some are missed because of the failure to make a complete examination.

NONSURGICAL CONGENITAL HEART DISEASE

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It was not many years ago that the definitive diagnosis of congenital heart disease seemed about as impossible as does a trip to the moon today. Then, along came brilliant, cooperative, experimental and diagnostic work of a few surgical and medical investigators (an excellent example: Dr. Blalock and Dr. Taussig and their co-workers at Johns Hopkins), which proved that congenital cardiovascular disease, when treated surgically, was either helped greatly or cured in some instances. With the stimulus created by these workers, interest in this field was aroused and the medical diagnostic world suddenly awakened. Pediatricians and internists commenced to diagnose congenital cardiovascular disease with surprising accuracy, so that today over 90 per cent of patients with such anomalies are correctly labeled with the aid of the simplest of commonly used diagnostic equipment, namely, stethoscope, fluoroscope, electrocardiogram, and complete blood count. It is in only a small percentage of cases that specialized technique is needed to clinch the diagnosis.

Surgical congenital heart disease has just been excellently reviewed by Dr. Wallace Clyde. The majority of cases, however, are as yet nonsurgical. Surgical investigators are working feverishly to convert this latter

group in order that most, if not all, congenital disease may be aided or corrected surgically. Until the fruits of their work have ripened and become applicable and available to the human, today's challenge must be to pay special attention to the welfare, care and treatment of nonsurgical congenital cardiovascular disease until such time as this group may be treated surgically.

There are hundreds of varieties and combinations of congenital cardiovascular malformations; too numerous to mention, even briefly, in a short time. A very few varieties, however, compose a large majority of all congenital cardiovascular disease, and most of these cases possess one common denominator—a precordial (left anterior chest) systolic murmur. There will be time to discuss these cases.

INTERVENTRICULAR SEPTAL DEFECT

A healthy and active individual. He or she will, undoubtedly, never be handicapped by this defect, and life not be shortened by it. Physical examination reveals a loud systolic murmur with associated thrill at the fourth left interspace, parasternally. Despite intensity of murmur, it is usually not heard well posteriorly, because flow of blood and, consequently, transmission of murmur is from left ventricle, posteriorly, to right ventricle, anteriorly. Fluoroscopically, the heart is normal. The electrocardiogram is normal. The most important treatment is the reassurance of the affected individual and his family.

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INTERAURICULAR SEPTAL DEFECT

This means a large (greater than 1 centimeter) opening between the two auricles with flow of blood from left to right auricle and, consequently, right heart embarrassment. Often, in these cases, heart failure does not happen until some complication, such as systemic infection, rheumatic disease or arteriosclerosis, supervenes. The life span is shortened. There is usually a history of frequent respiratory infection, exertional dyspnea, perhaps dizzy and faint spells. Examination may reveal an underdeveloped person with a bulging anterior chest, a mid-precordial heave; often, a loud systolic murmur with associated thrill, best heard at the third left interspace, parasternally, and an accentuated P2. Fluoroscopically, there is enlargement of the right ventricle and auricle and pulmonary conus; and enlarged, distinct, vigorously pulsating hilar vessels. This latter finding is in contrast to relatively clear peripheral lung fields. The electrocardiogram shows evidence of slight to moderate right ventricular enlargement, often deformed P waves, rhythmical disturbances, and conduction defects. This patient may need active as well as preventive treatment.

LUTEMBACHER SYNDROME

The name may frighten. However, the condition is merely that of a large interauricular septal defect with associated mitral stenosis—either congenital or acquired. In other words, it is an interauricular septal defect with an associated lesion. The picture, therefore, is that of an advanced interauricular septal defect. There is a history of poor nutrition, perhaps rheumatic fever, respiratory infection at frequent intervals, restricted activity because of dyspnea, weakness, and susceptibility to syncope. These persons are, of course, restricted in activity but may reach adulthood. Physical examination reveals a frail, undernourished patient with bulging anterior chest and a heaving precordium, accentuated P2, a loud systolic murmur with associated thrill at the third left interspace, parasternally, and, perhaps, a low pitched rumbling apical diastolic murmur. This mitral stenosis may be silent because velocity of blood flow, one of the necessary factors in production of any murmur, is lessened from left auricle to left ventricle by the simultaneous flow of blood

through the interauricular septal defect into the right auricle. Fluoroscopically, there is a markedly enlarged right ventricle and auricle. There is not much, if any, enlargement of the left auricle such as is seen in uncomplicated mitral stenosis (relief of left auricular pressure by interauricular septal defect). Markedly prominent and vigorously pulsating pulmonary conus and pulmonary hilar vessels are observed. Peripheral lung fields are relatively not as striking in their congestion. The electrocardiogram shows moderate right ventricular enlargement with, perhaps, abnormal P waves, conduction and rhythmical disturbances. Treatment is often active as well as preventive.

EISENMENGER COMPLEX

This is an uncommon condition, even as far as congenital disease is concerned. It is like tetralogy of Fallot only in that there is an overriding aorta and a high ventricular septal defect. Unlike tetralogy of Fallot, there is no pulmonary stenosis, nor is there much, if any, right heart enlargement. In these cases there is too much blood entering the pulmonary tree. Longevity is shortened, although these patients often live to enjoy adulthood. Inquiry into history reveals some degree of underdevelopment, cyanosis on effort (although, sometimes, not until puberty), weakness, exertional dyspnea and fainting episodes, and frequent respiratory infection. On physical examination, the patient is not necessarily underdeveloped; perhaps, there is slight cyanosis, but without clubbing. On auscultation of the chest, P2 is accentuated. Usually, there is a loud systolic murmur (with associated thrill) heard best at the third left interspace, parasternally. A high pitched aortic, diastolic murmur is frequently present. Fluoroscopically, the heart is normal in size and contour, except for prominence of the pulmonary conus. There are slight to moderately enlarged pulsating hilar pulmonary vessels. Laboratory studies may be very helpful and necessary in clinching the diagnosis. The circulation time is shortened and arterial oxygen saturation is decreased. The electrocardiogram is usually normal. The treatment is preventive and ultimately active.

Systolic murmurs in the conditions described here must be differentiated from the systolic murmur of acquired disease, as well

as that sometimes present in the absence of disease.

A precordial systolic murmur in acquired disease is most often the result of regurgitation of blood from the left ventricle back into the left auricle through a mitral valve which does not completely close in systole. In younger persons, failure of mitral valve closure is usually due to rheumatic mitral disease; in adults this backward regurgitation is often due to left ventricular enlargement resulting from any number of diseases such as hypertension, arteriosclerosis, toxicity. (It may, of course, also be the result of mitral valve damage as in the younger age group.) Inasmuch as the left auricle is located posteriorly and the direction of blood flow is backwards into the left auricle from the left ventricle in mitral regurgitation cases, a systolic murmur is heard best at, or outside, the apex and is transmitted well, laterally and posteriorly; this, in contrast to congenital systolic murmurs which are heard best inside the apex and usually are not well transmitted posteriorly. Fluoroscopically, in acquired disease, there is often prominence of hilar vessels and pulsations but this prominence is not as striking as in congenital disease; left auricular enlargement is more often seen in acquired disease. The electrocardiogram is not specific and, therefore, not too helpful.

Physiologic systolic murmurs are usually heard inside the left nipple line. They are not well transmitted. They are not loud as a rule, and are generally inconstant and influenced by respiration and position. There is not an associated thrill. Fluoroscopic and electrocardiographic findings are normal.

TREATMENT

Preventive treatment of congenital heart disease is of extreme importance. These patients are susceptible to respiratory infection and often more so than are those with acquired disease. They need to be watched with respect to dampness, cold weather and fatigue. The diet should be high in calories and vitamins. The fluid intake must be adequate. Tonsillectomy and adenoidectomy are usually advisable. Sulfa drugs in small daily doses are helpful when taken throughout late fall and winter and the early spring months of the year. Oral penicillin is, likewise, effective in reducing incidence of respiratory infection in these persons.

Then there is active treatment, which needs a great deal of emphasis. There has always been some degree of reluctance, on the part of many physicians, in the treatment of early heart failure and the prolonged continuation of such treatment in the younger age group. Heart failure must be treated in any one at any age, regardless of cause and, especially, in congenital heart disease cases if we hope to maintain them until such time as surgery may apply. Heart failure drugs, such as digitalis, mercurhydrin (most effective), aminophylline and quinidine (arrhythmia), are helpful and not harmful, if used properly, and they may need to be kept up for an indefinite, prolonged period of time, if not for the duration of life. Complications in congenital heart disease, such as subacute bacterial endocarditis and thrombo-embolic disease, are treated as indicated in orthodox fashion. One of our greatest advances in the treatment of cardiovascular disease has been the use of penicillin in curing subacute bacterial endocarditis.

The above diagnostic and treatment discussion of nonsurgical congenital cardiovascular disease, if it has helped to make us realize that the condition of individuals thus affected may be, in most instances, simply diagnosed without the use of complicated, elaborate equipment, has served as a main purpose in the presentation of this paper.

Alabama has its share of congenital heart disease, and facilities in the state for its diagnosis and treatment are available and adequate. We shall want to make the most of what we have and shall endeavor to keep up with and contribute to that which is to come.

Hypertension—A practical program for the management of the patient with essential hypertension which is based on our knowledge of the disease would be as follows. The patient should receive as little therapy as possible and still keep him comfortable and safe. The basic therapeutic procedure is psychotherapy consisting of education and encouragement by his own physician with the addition of whatever drugs may seem to be of value. Failure of this line of therapy would constitute an indication for the trial of the rice or low sodium diets if there is no kidney complication. Surgery should be advised for those patients who do not present the contraindications and who continue to have true hypertensive symptoms in spite of other therapy and for those who are developing the accelerated form of the disease.—Close, *J. Indiana M. A.*, Aug. '50.

EXPERIENCES WITH SURGERY FOR RELIEF OF CON-
GENITAL MALFORMATION OF THE HEART
AND GREAT VESSELS

CHAS. J. DONALD, JR., M. D.
Birmingham, Alabama

Surgery of the heart and great vessels has long been thought to present a risk too hazardous to be performed on a human. However, in the past few years great strides have been made in this field. Gross in 1936 ligated the first patent ductus arteriosus. Then Blalock in 1943 performed his first shunt operation for the relief of pulmonary stenosis. This was soon followed by the successful resection of a coarctation of the aorta by both Craaford of Sweden and Gross of this country. All of these procedures are now accepted and are being done in various medical centers throughout the country.

We in Birmingham did our first such operation in June 1948 for patent ductus arteriosus. From then until now a total of 33 operations have been performed for these three conditions. See Table 1. It is the purpose of this paper to give the indications for surgery of this type, the risk involved, and our experience with it.

TABLE 1
SURGERY OF THE HEART AND GREAT VESSELS
Operations, June 1948-April 1950

	No.	Deaths	Mortality
Ductus Arteriosus	12	0	0
Tetralogy	16	2	12.5%
Coarctation of the Aorta	3	0	0
Total	33	2	6.6%

PATENT DUCTUS ARTERIOSUS

The diagnosis of patent ductus arteriosus has been fully covered in the preceding papers of this symposium. As a general rule, a patent ductus arteriosus will give trouble before the age of 35 or 40 years. The amount of trouble due to a patent ductus is directly proportional to the size of the vessel. An occasional case has been reported of a patent ductus living to a ripe old age. However, we feel that with our present day technique and the reported mortality of 1 per cent and

less that the risk of surgery is much less than the risk of cardiac decompensation or endocarditis from keeping a patent ductus arteriosus over many years.

The optimal age for surgery in patent ductus arteriosus is between four and twelve years. Younger patients are operated on only when there is evidence of cardiac failure or the presence of endocarditis. Older patients, past 12 to 15 years of age, develop sclerosis of the ductus, which, in the presence of many adhesions, makes surgery more difficult.

We have operated on 12 patients with patent ductus arteriosus, without any deaths. The ages of these patients varied from 2½ to 19 years of age. Of this group the ductus has been ligated and transfixed in 4 places in ten patients. Two patients had the ductus divided and the open ends sutured. Whether the ductus should be ligated or divided has been the source of much argument. It is my opinion that the results with either method will be good in selected cases. It has been my policy to divide the ductus in the older age group or in patients who have endocarditis. It is also my feeling that the chances of a recurrence are practically nil when one ligates a long, soft patent ductus in a young patient.

We therefore believe that the indication for operation on a patent ductus arteriosus is merely its presence since the reported mortality is 1 per cent and less. Indications for immediate surgery are the presence of cardiac enlargement, or failure, and endocarditis, associated with patent ductus arteriosus.

OPERATIONS ON CYANOTIC PATIENTS

Dr. Blalock's ingenious operation for the relief of pulmonary stenosis is one of the most important contributions to modern surgery. In pulmonary stenosis there is an inadequate amount of blood flowing through the pulmonary arteries. His operation relieves this condition by a shunt of a portion of the systemic circulation into the pulmo-

Part three of a symposium on congenital heart disease presented to the Association at its 1950 meeting, Birmingham, April 20.

nary arteries. The classical operation that bears his name is an end-to-side anastomosis between the subclavian branch of the innominate artery and the pulmonary artery.

Shortly after Dr. Blalock reported his new operation, Drs. Potts and Smith of Chicago reported another ingenious operation for the relief of the same condition. Their operation was a side-to-side anastomosis or shunt between the aorta and the pulmonary artery.

It is difficult to state which of these operations is superior. It is my opinion that any one doing this type of surgery should be able to do either rather than to make any one procedure do for all cases.

The type of operation depends on several factors. (a) Age of patient. The Potts-Smith operation is preferable in the very young age group (below 4 years) and is technically easier to perform, whereas either the Potts or Blalock operation may be done in older patients. (b) The side on which the aortic arch occurs is also important. Approximately 25 to 30 per cent of the aortic arches are on the right side in patients who have the tetralogy of Fallot. A right-sided arch makes the Potts operation quite difficult to perform. (c) The height of the aortic arch is also of importance. All too often there is an abnormally high aortic arch with correspondingly short subclavian vessels making a Blalock type of operation impossible or quite difficult to perform due to inability to bridge the gap between the vessels. The mortality of these operations depends on many factors—age group, risk, etc.—and therefore has been reported to vary from 4 to 15 per cent.

The optimal age for surgery in the cyanotic group is from 4 to 12 years of age. Operations are not usually done in the younger age group unless it would seem that there is less than a 50 per cent chance that the patient would not survive to reach the optimal age for surgery.

We have operated on 16 patients in the cyanotic group and have performed 4 types of shunts (see Table 2). There have been two deaths, one in an infant six months of age who had been in an oxygen tent most of his life and was the poorest type of risk. This infant died in 36 hours postoperatively. The other patient was 16 years of age. The operation was technically quite difficult

TABLE 2
SURGERY OF THE HEART AND GREAT VESSELS
Type Operation in Cyanotic Group

	No.	Deaths	Results	
			Improv.	Unimprov.
End-to-side (subclavian-pulmonary)	9	1	7	2
End-to-side (carotid-pulmonary)	1	0	1	0
End-to-end (subclavian-pulmonary)	1	0	1	0
Side-to-side (Pott's)	2	1	1	1
Exploratory only	3	0	0	3

due to the marked atrophy and thinning of the pulmonary artery. It was as thin as tissue paper. However, a satisfactory anastomosis and responding oxygenation of blood was accomplished. Some 12 hours postoperatively the patient began to bleed and in spite of multiple transfusions died 32 hours later. Autopsy revealed a rupture of the pulmonary artery. This rupture was not at the anastomotic site but was on the opposite wall and apparently resulted from a blowout secondary to the atrophied vessel.

Exploration was performed only in three cases. The operation could not be completed due to technical difficulty such as too short vessels or hemorrhage in one patient.

Excellent results have occurred in ten patients. Their symptoms have been markedly relieved and they are all able to go to school and lead relatively normal lives.

COARCTATION OF AORTA

Although there are two pathologic types of coarctation of the aorta, only the adult type is of surgical importance and is the only type that will be discussed at this time. The diagnosis of this condition has already been discussed.

The average life expectancy of patients with coarctation of the aorta is around 30 years of age. Death results from (1) stroke, (2) congestive heart failure, or (3) rupture of an aneurysm that is often associated with the coarctation. Therefore, we feel that all patients with coarctation should have the benefit of surgery unless there is some definite contraindication. The optimal age for resection of the coarctation is between 7 and 18 years of age.

The best operation for the relief of this condition is the resection of the coarctation,

followed by an end-to-end anastomosis of the two ends of the aorta. This is sometimes impossible to do because of the excessive length of the coarctation. In this event two other procedures may be done: (a) an anastomosis between the subclavian artery and the distal end of the aorta, or (b) the substitution of a vein graft to bridge the gap between the two ends of the aorta.

The mortality of this operation naturally varies with the various age groups. It is quite low in the younger patients.

We have operated on 3 patients with coarctation of the aorta. An end-to-end anastomosis was done in all 3 cases. Two of the patients were 7 years of age and the other 19 years. No deaths have occurred and excellent results have been obtained in all patients. Postoperatively they have all had normal blood pressure in both upper and lower extremities.

In Table 3 are listed the postoperative complications. It is not surprising that 22 of

TABLE 3
SURGERY OF THE HEART AND GREAT VESSELS
Complications

	Number	Deaths
Hemorrhage	1	0
Pneumonia	1	0
Pleural effusion	22	0
Laryngeal edema	4	0
Horner's syndrome	3	0
Cerebral embolus	1	0
Cardiac arrest	1	0
Thrombosis at anastomotic site	2	0

these patients developed pleural effusion as this is normally expected following any type of chest operation. A tracheotomy tray is always kept in the patient's room for the first forty-eight hour period as this is the critical time in which laryngeal edema will occur. We are fortunate that only one case developed a cerebral thrombosis postoperatively and I believe it is because of the very careful attention given their fluid requirements. Thrombosis at the anastomotic site occurred two times. In one of these patients the anastomosis apparently functioned well for approximately six months before it was occluded with clot formation.

SUMMARY

We have endeavored to give our experience with the surgery in 33 cases of ductus arteriosus, the tetralogy of Fallot and coarctation of the aorta.

Electrocardiography—Almost automatically one thinks of digitalis first when considering the use of the electrocardiograph as a guide in therapy. It is true for the largest number of cases that judicious use of the drug and careful observation of the patient alone suffice to administer digitalis adequately and safely. We simply don't routinely resort to electrocardiographic control of each patient receiving digitalis. We find no risk in such practice provided the patient is cautioned to discontinue the use of the drug upon onset of certain symptoms and to return regularly for supervision.

Furthermore, the idea of any precise relationship between digitalis dosage and configuration of the electrocardiographic tracing in the sense of quantitative parallelism between the two would be utterly wrong. It has been shown conclusively by Geiger and others that uniform digitalis effects on the electrocardiogram cannot be found with any measure of dependability. However, the electrocardiographic tracing generally does indicate to the physician whether or not a patient is either receiving digitalis, or too much digitalis, provided no rigid pattern and nothing mathematically commensurate with the consumed amount of the drug are insisted upon.

Electrocardiography may be a life-saving method, under such circumstances as have been discussed previously, in detecting digitalis intoxication when a superficial impression might well tempt one to give the patient still more digitalis. Such fatal "treatment" can and must always be prevented by the timely use of a preliminary electrocardiographic tracing.

Another situation in which digitalis is contraindicated is partial A-V heart block with occasional dropped beats. This can easily be demonstrated electrocardiographically and the risk of further aggravating the block by the administration of digitalis can thus be avoided.

When massive digitalization is undertaken because of acute heart failure and insufficient response to the drug, it may be wise to proceed cautiously and to solicit additional aid of electrocardiography in guarding against overdosage. In thyrotoxic patients the digitalis requirement may be two or three times greater than in other people having the same degree of heart failure. Even though this fact is well known, it is, nevertheless, advisable to obtain electrocardiographic tracings for the purpose of playing safe while pushing the drug to the necessary limit.

Auricular flutter may also require much digitalis for its conversion into auricular fibrillation. There, too, one should watch therapy electrocardiographically and also retain the tracings of both the flutter and fibrillation for the sake of record.

The control of quinidine therapy is comparatively less mandatory, as a rule, than that of digitalis. Since quinidine is used mainly for the prevention and treatment of cardiac arrhythmias of paroxysmal nature, one is bound to get electrocardiographic tracings of such patients anyway for the purpose of recording the various phases of the transition from one to another.—*Backer, Connecticut M. J., Aug. '50.*

ANESTHESIOLOGY IN CONGENITAL HEART DISEASE

E. B. ROBINSON, JR., M. D.

Fairfield, Alabama

Since most of the surgery for congenital heart disease is in children, it has become rather common within the last few years in various places to do quite a large number of cases of surgery of this type successfully. Advances in modern anesthesia have made such surgery possible, so that now we are able to maintain the patient closer to a physiologic balance. Of course, it is understood that in cardiac surgery we are always dealing with a patient who has varying degrees of disturbed physiology.

The preceding essayists have told you something about the different types of cardiac and great vessel surgery that can be done and are being done with good results at the present time. However, a patient with the tetralogy of Fallot is usually by far the poorest risk, and presents anesthetic problems which are unique to this particular condition. From an anesthetic standpoint, irrespective of what type operation is undertaken, whether a Blalock or a Potts-Smith, the problems are the same. As in other procedures, various and sundry anesthetics have been tried. For example, in Minneapolis a group has been using nitrous oxide, pentothal and curare successfully. The Mayo Clinic has used an ether technique, and even some have been bold enough to try this surgery under a high spinal anesthesia. That so many different techniques have proved satisfactory for this work is indeed a healthy condition.

I will present only that technique which has been used successfully by me and others doing this work in this community. The extreme hypoxia of these children, even while at rest, makes them difficult problems preoperatively. They all have a low reserve, and the psychic factor is quite common—to the extent that it is most desirable to have a depression of metabolic activity, and with psychic sedation the patient can more efficiently utilize the oxygen that is supplied. We have found that these patients tolerate

morphine quite well and, accordingly, it may be given in larger doses than one would ordinarily consider. A two or three month old infant, weighing only seven or eight pounds, can be given morphine, 1/48 grain, and atropine, 1/600 grain. As age increases, the amount of morphine and atropine is increased, so that a four or five year old child may receive as much as 1/8 grain of morphine and 1/200 grain of atropine. As stated before, the morphine is given because of its sedative effect. Large doses of atropine as used are given primarily for the purpose of keeping down secretions, but most important of all to depress the parasympathetic nervous system in order to obviate or at least minimize any untoward reflexes during the surgery. It is our effort in the giving of premedication to have the patients in such a state that, if undisturbed, they will be drowsy or asleep when they reach surgery.

In choosing the anesthetic agent and technique, it is desirable to use the one that permits a rapid and smooth induction with a high oxygen tension, to permit close control of the depth of anesthesia, and to insure an adequate airway so that the lung may be collapsed or expanded instantly. The method should be one that has no excess carbon dioxide, one that will permit a rapid return to consciousness, and most of all will cause as little further disturbance of physiology as is possible. Thus far, we have found that an induction with cyclopropane meets these qualifications. Once anesthesia is established, an endotracheal tube of the proper size is placed in the trachea. This endotracheal tube is then directly connected to a to-and-fro soda lime absorber in order to remove the carbon dioxide from the atmosphere. Ether is gradually added to the system, so that very shortly the patient receives only ether and oxygen. I feel this is of advantage because ether will better obtund the reflexes than will cyclopropane alone. Further, we know that cyclopropane has a tendency to sensitize the cardiac conductive mechanism, which is one thing we desire to avoid. Untoward reactions of a

The concluding portion of a symposium on congenital heart disease presented to the Association at its annual meeting in Birmingham, April 20, 1950.

reflex nature are more apt to happen during the progress of the surgery, when, of necessity, the surgeon must handle the great vessels and be close to the hilum of the lung. Maintenance of anesthesia with ether vapor and oxygen in our hands has proved highly satisfactory. Once anesthesia is established, very little ether is needed for maintenance, and the patients usually react shortly after the operation is completed. It is important to know that during anesthesia an ice bag must be placed on the soda lime absorber. As the carbon dioxide is absorbed by the soda lime a large amount of heat is generated, which will heat up the patient and, in addition, warm the inspired atmosphere too much. We all know that children tolerate increased temperature under such circumstances very poorly, and if this factor is not watched closely and the soda lime canister kept cool by use of an ice bag, it is possible that the patient may have a convulsion. In addition to this, other authors¹ have recommended producing hypothermia in order to reduce metabolism during the operation, and

1. McQuiston, William O.: *Anesthetic Problems in Cardiac Surgery in Children*, Anesthesiology 10: 590-600, 1949.

thereby allow the patient's physiology to use the oxygen supply more efficiently. As yet, we have not tried this technique in our work. Thus far, we have encountered little or no difficulty with these patients because of shock occurring during surgery or in the postoperative period. Our procedure is usually to place a cannula in a vein at the ankle prior to surgery, starting an infusion of normal saline at a slow rate, and about the time actual surgery begins blood plasma is started. Blood plasma suffices since most of the patients have polycythemia. The effort is to replace in volume that which is lost during surgery.

Much emphasis has been placed quite properly on efforts to make a correct diagnosis in these cases. It has been pointed out also that this is not always possible in every case. You have also been told about the surgical technique and some of the difficulties encountered. To me, I feel that one of the most important factors is that of postoperative care and postoperative complications. Such complications must be recognized instantly and treatment instituted at once, for these patients cannot tolerate a delay in having such conditions corrected.

OBESITY

WITH SPECIAL REFERENCE TO CARDIOVASCULAR DISEASE

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Obesity is one of man's most common and probably most neglected abnormalities. Its effect on longevity are not sufficiently emphasized by the physician and its hazards are not appreciated by the public. It is our duty as physicians to emphasize continually the dangers of obesity to our patients even when they consult us for unrelated conditions. Much of the obesity of middle age could be prevented if the significance of excessive weight were explained to the patient before his obesity became marked.

The table shows the very definite effect of obesity on longevity.

" Gross obesity increases the incidence of many of the degenerative diseases. Heart disease, hypertension, nephritis, degenerative arthritis, gallbladder disease, arterio-

INFLUENCE OF OVERWEIGHT ON MORTALITY IN PERSONS AGED 45 TO 50 YEARS

Overweight	Increased Mortality (above average) Per Cent
10 pounds	8
20 pounds	18
30 pounds	28
40 pounds	45
50 pounds	56
60 pounds	67
70 pounds	81
80 pounds	116

From "Obesity" by Newburgh.

sclerosis, diabetes mellitus, varicose veins, and venous thrombosis occur with greater frequency in the obese. Diaphragmatic hernia seems to be more common in people of excessive weight.¹ The fat patients are a poorer surgical risk and their accident rate

is high due to clumsiness. Exertional dyspnea occurs in gross obesity of long standing and is probably due to the deposit of excessive amounts of fat in the abdominal and thoracic walls^{2, 3} producing a mechanical restriction of the respiratory effort. Emphysema may develop with a permanent impairment of the vital capacity which would add to the cardiac load.¹

A caloric intake in excess of the number of calories utilized is the cause of obesity. Expressed in more familiar parlance, obesity is due to overeating. There is a popular notion that obesity is due to some endocrine disturbance. Hypothyroidism is frequently accused of being the cause of obesity but I know of no statistical data that prove a higher incidence of obesity in myxedema than in the normal population.⁴ It is hard to accept the theory that under function of the pituitary is responsible for obesity when atrophy of this gland in Simmind's disease is associated with marked cachexia. There is a characteristic distribution of fat in Cushing's syndrome but the accompanying symptomatology sets it apart from the usual form of obesity, and, furthermore, cases of Cushing's syndrome have been reported that were not obese^{5, 6, 7} and weight loss can be induced by a low caloric intake.⁸ The increase in

weight that occurs with the onset of hypogonadism during middle age is not universal and obesity at this time responds very favorably to a low caloric intake. The increase of weight at this time is due to a decrease in physical activity without a decrease in caloric intake.

So called "familial obesity" is probably due to the parents indulgence in an abundance of high caloric foods and not to hereditary factors. The children are exposed to the same foods at the same table for many years and develop an appetite for the same types of foods.

There is no evidence to support the theory that obese people absorb more of their food or metabolize food differently. The fat lady who says, with apparent sincerity, "I eat like a bird but it all turns to fat" may actually believe such is the case because she has used this statement for many years to defend her obesity. However, hospitalization of such a patient with strict supervision of a low caloric diet produces weight loss and a chagrined patient.

The morale of the obese patient trying to adhere to a reducing diet is frequently low and he welcomes an excuse to return to his much loved high caloric diet. For this reason it is important to emphasize a few facts when the reducing diet is started, preferably in writing so they may be referred to in the future. The patient should be told that reduction will be more rapid during the first few weeks than it will be later as his weight approaches normal. He should be taught to expect periods of several days when he fails to lose weight due to water retention and that it will be followed by a period of more rapid loss of weight when the water is excreted. He must be convinced that his obesity is due to excessive food intake and not to some glandular disturbance which he does not understand or to some hereditary factor beyond his control. It is true that it may be necessary to permit an occasional patient to take a small amount of thyroid extract for a few weeks to keep from offending him. However, he should be informed that this is being permitted to convince him that he is wrong and that endocrine therapy is not necessary if the diet is followed. Large amounts of thyroid extract should never be permitted, especially in the older group

1. Bockus, H. L.: *Gastro-Enterology: Small and Large Intestine and Peritoneum*. Philadelphia, W. B. Saunders Company, 1946, volume 2, p. 975.

2. Kerr, W. J., and Lagen, J. B.: The Postural Syndrome Related to Obesity Leading to Postural Emphysema and Cardiorespiratory Failure, *Ann. Int. Med.* 10: 569-595 (Nov.) 1936.

3. Short, J. J., and Johnson, H. J.: The Effect of Overweight on Vital Capacity, *Proc. Life Ext. Exam.*, 1: 36-41 (March-Apr.) 1939.

4. Seward, B. P.: A Clinical Study of the Mild Grades of Hypothyroidism, *Ann. Int. Med.* 9: 178-188 (Aug.) 1935.

5. Lightwood, Reginald: Tumour of the Suprarenal Cortex in an Infant of 18 Weeks, *Arch. Dis. Childhood.* 8: 35-42, 1932.

6. Marks, T. M.; Thomas J. M., and Warkany, J.: Adrenocortical Obesity in Children, *Am. J. Dis. Child.* 60: 923-942 (Oct.) 1940.

7. Willson, D. M.; Powder, M. H., and Kepler, E. J.: Alkalosis and Low Plasma Potassium in a Case of Cushing's Syndrome; a Metabolic Study, *J. Clin. Investigation* 19: 701-707 (Sept.) 1940.

8. Freyberg, R. H., and Newburgh, L. H.: The Obesity and Energy Exchange in a Verified Case of Pituitary Basophilism, *Arch. Int. Med.* 58: 229-234 (Aug.) 1936.

because the coronary arteries may be too sclerotic to carry the load of an increased metabolism.

An obese patient should be handled with diplomacy and tact because an offended patient is not a cooperative patient. The grossly obese is often a sensitive individual because he is grotesque in appearance and his participation in sports and other physical activities are limited.

Emotional tension in the maladjusted individual is an etiologic factor of obesity that is not sufficiently appreciated. There is no doubt that this factor is frequently present and the patient resorts to frequent meals and larger meals for the same reason a cigarette smoker smokes more frequently and the alcoholic increases his consumption of alcohol when under emotional tension. If the emotional conflicts can be discovered and corrected, reduction of weight is simplified and more successful.

The strict adherence to a low caloric diet is the basis for success in the treatment of obesity; without it only failure can result. Breakfast should consist of a small serving of one of the five or ten percent fruits, one egg and one half slice of dry toast. The noon and evening meal should consist of lean meat (after all fat has been carefully removed) and five or ten percent vegetables as desired; a small serving of the five or ten percent fruits may be permitted as a dessert. Clear soups, coffee and tea can be taken at will if no sugar or cream is added. Such a diet is deficient in calcium and fat soluble vitamins and should be supplemented by calcium and one potent multiple vitamin capsule daily. The grossly obese can lose weight on such a diet without limiting the quantity of these foods. As reduction progresses the quantity of these foods may be limited to produce a lower caloric intake if necessary. A weight loss of four or five pounds a month is adequate.

Amphetamine may be of value in reducing appetite but if it is prescribed the patient should be informed that this drug, as well as all other drugs, is no substitute for determination to adhere strictly to the prescribed diet.

There are few if any contraindications to reduction of gross obesity if the patient is kept under close supervision. Minor de-

grees of obesity should be ignored in patients with a malignancy or some chronic infection such as tuberculosis or ulcerative colitis because weight loss is to be expected.

Hypertension and/or arteriosclerotic heart disease should never be considered as a contraindication to reduction even if there is a history of myocardial infarction or congestive failure. It is probably in this class of patients that reduction to a normal or slightly subnormal weight is most beneficial. Reduction in weight is no assurance that these patients will not have a myocardial infarction or a persistent hypertension. However, since hypertension and degenerative heart disease are more frequent in the obese it seems that reduction in weight is a step in the right direction. Obesity increases cardiac work in two ways: (1) it is excessive weight that must be transported by the individual; and (2) the adipose tissue has many blood vessels which must be irrigated. These are simple facts which will impress the obese cardiac patient with the importance of reduction.

CONCLUSIONS

Obesity is a neglected field of preventive medicine. Prevention of obesity would mean a decrease in the incidence of the degenerative diseases, a decrease in the disability, and an increase in the longevity of the population.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

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This six year old boy was brought to the Children's Clinic with a history of having had attacks of vomiting every 2-3 weeks for three years. The symptoms in all the attacks were similar in kind, differing in degree. About twenty-four hours before the attack he would become listless, develop dark rings under his eyes, have a sense of discomfort in the upper abdomen and lose his appetite. The vomiting usually began suddenly and was associated with great retching and distress, and was often repeated every 30 to 60 minutes for 2 to 3 days. The vomitus consisted of frothy mucus and watery material, frequently streaked with blood, apparently from the violence of the

emesis, and often containing bile. He had fever with some attacks but not all of them. The attacks usually stopped as suddenly as they started, provided no food was given until the vomiting had stopped.

A working diagnosis of gastro-intestinal allergy was made at this time. He was skin tested with the foods and inhalants enumerated below:

- | | |
|------------------|-------------------|
| 1. Cat hair | 30. String bean + |
| 2. Dog hair | 31. Barley |
| 3. Horse hair | 32. Corn |
| 4. Goat hair | 33. Oats |
| 5. Rabbit hair | 34. Rice |
| 6. Wool | 35. Rye |
| 7. Feathers | 36. Wheat |
| 8. Cottonseed | 37. Milk |
| 9. Kapok | 38. Lactalbumin |
| 10. House dust | 39. Egg |
| 11. Orris root | 40. Cocoa + |
| 12. Codfish | 41. Mustard |
| 13. Beef | 42. Coffee |
| 14. Chicken | 43. Tea + |
| 15. Lamb | 44. Apple + |
| 16. Pork + | 45. Grape |
| 17. Cabbage | 46. Pineapple |
| 18. Celery | 47. Peanut + |
| 19. Carrot + | 48. Pecan |
| 20. Green pea | 49. Navy bean |
| 21. White potato | 50. Dried pea |
| 22. Tomato + | 51. Lettuce |
| 23. Banana | 52. Turnip |
| 24. Grapefruit | 53. Apricot |
| 25. Orange | 54. Prune |
| 26. Peach | 55. Trout |
| 27. Pear | 56. Sweet potato |
| 28. Strawberry | 57. Timothy |
| 29. Lima bean | 58. Ragweed |

He was found sensitive to the foods indicated by the + sign. Pork and peanuts were found to be the foods he was most allergic to, as giving these foods would provoke an attack in just a few hours.

He is now fourteen years of age and has had only three attacks since the skin tests were done and each time the attack had followed the ingestion of one or more of the foods to which he was allergic.

This case fits the description in the textbooks under the headings: Cyclic Vomiting, Recurrent Vomiting or Acetonemic Vomiting.

In my opinion this was a case of gastro-

intestinal allergy and is the etiology of the majority of cases of cyclic vomiting. It certainly should be thought of and considered as a possible cause of this condition.

During the attacks it is often necessary to give saline and/or glucose solution to prevent dehydration and acidosis.

Asthma—Asthma should be regarded as a symptom, and the doctor must ask himself what kind of asthma the patient has, and what is the probable lesion causing the wheeze.

In 1947, I presented a classification of patients with asthma, which has been found to be of considerable practical importance in the management of patients. First of all, there is a profound difference between the kind of asthma which begins in young people and is due to allergy, and the other kind of asthma which begins in older people past forty years old, and which has nothing to do with allergy. The age at onset of the asthmatic symptoms is, therefore, a matter of almost vital practical importance, and to determine this age should be the first step in history taking. The rule is that "When asthma begins before the age of thirty, that is allergy unless proved otherwise; but when asthma begins after the age of forty, that is not allergy unless proved otherwise"—and it is a good rule.

The "allergic individual" has several characteristics. First, his history will show that there is allergic disease in his family in about 75 per cent of the cases. Sometimes the eczema, hay fever, asthma, or urticaria are noted on the father's side, other times on the mother's side. When both sides of the family are affected, the percentage of allergic diseases in the offspring is greater.

Secondly, the allergic individual may himself have had earlier manifestations of allergy. Infantile eczema, for example, presents a fairly uniform and characteristic clinical picture, and the story of it is often given by patients who develop hay fever or asthma later on.

Thirdly, the allergic individual has the capacity to develop sensitiveness and, in the typical case at least, the history may show a sequence of symptoms. For example, hay fever developed at age ten, with perhaps a change in the kind of hay fever at about age fifteen, and then later on with asthma in the pollen season as a complication. Meanwhile, the youth has developed a sensitiveness to cats or dogs, or perhaps to certain household dusts, to which he has been exposed. Routine examination of such a person may show the scars of early eczema in the front of his elbows or the back of his knees; it may show the presence of a blood eosinophilia up to about 7, 15, or even 20 per cent of the total white cells.

When such an allergic individual has asthma the cause of his trouble ought not to be too hard to find, and the finding depends upon just one thing—the taking of a careful history.—*Rackemann, GP, Aug. '50.*

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RESEARCH CAREERS IN HEART DISEASE

Acting to help meet the urgent need for qualified research workers who can concentrate their full time in the heart disease field, the American Heart Association is establishing Career Investigatorships as part of its research program, according to an announcement made by Dr. H. M. Marvin, President of the Association.

Dr. Marvin said that a career of investigation in the cardiovascular field, supported by the Association, will be made available to "a select group of outstanding persons of unusual ability and originality," preferably in the 35 to 45 age group. "They will have the opportunity," he said, "of making research relating to cardiovascular problems their primary aim."

"Such provision for continuing careers for able investigators is one of the most important contributions that can be made at the present time in the heart disease field," Dr. Marvin pointed out, "because of the severe shortage of qualified full-time research workers needed to probe into the many unknown factors. Medical science is still in the dark concerning many heart and circulatory ills which, as a group, are the nation's leading cause of death and disability."

"The Association has awarded in the past, and will continue to award, short-term grants to individual investigators as well as to institutions for research projects," Dr. Marvin said. "However, the major part of the Association's research funds will be given to support individuals who are interested in a career of research rather than to the traditional support of short-term projects."

Dr. Marvin explained that nominations for Career Investigators may be made by members of the Scientific Council of the American Heart Association, deans of medical schools, and heads of research units in the United States. The nominations should be sent to Dr. Charles A. R. Connor, the Association's Medical Director.

The Career Investigator will engage in research of his own choosing in the cardiovascular field. He may work in any institution in the United States which offers adequate facilities, and he will be free from additional administrative duties at that institution. Not more than 15 per cent of his time is to be spent in teaching. Certain Career Investigators may have access to patients, but any income thus created will be considered part of the stipend provided by the American Heart Association.

MEETINGS

INTERNATIONAL COLLEGE OF SURGEONS

United States Chapter

The International College of Surgeons, United States Chapter, will hold its fifteenth Annual Assembly and Convocation in Cleveland, Ohio, October 31, November 1, 2, 3, 1950 according to George M. Curtis, M. D., Columbus, Ohio, Chairman of the Assembly.

The program will include scientific sessions on subjects in the fields of general surgery; eye, ear, nose and throat surgery; gynecology and obstetrics; urology; and orthopedic, thoracic, plastic and neurologic surgery. In addition, an extensive technical and scientific exhibit will be presented by leading manufacturers of surgical instruments, x-ray apparatus, operating room and hospital equipment, pharmaceuticals and others, Dr. Curtis said. Special entertainment for the doctors' ladies has been planned.

Arnold S. Jackson, M. D., Secretary of the United States Chapter, has reported from Madison, Wisconsin, that several hundred surgeons will be received as Associates and Fellows of the International College at the Convocation to be held in the Cleveland Public Auditorium, November 3.

All doctors of medicine interested in surgery and its advancement are invited to attend, and can obtain a program upon request to Arnold S. Jackson, M. D., Secretary, Jackson Clinic, Madison 4, Wisconsin. For hotel reservations, contact Committee on Hotels, International College of Surgeons, U. S. Chapter, 511 Terminal Bldg., Cleveland 13, Ohio.

Members of the Association who will participate in the program are William H. Riser, Jr., and Gilbert F. Douglas, Birmingham; and Stephen A. Zieman, Mobile.

INTERNATIONAL COLLEGE OF SURGEONS

Alabama Chapter

The Alabama Chapter of the International College of Surgeons will meet in Tuscaloosa, October 12. According to Vice-President Otis L. Jordan, an excellent scientific program will be presented. The meeting will be held at the Tuscaloosa Country Club.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

BELOW THE SURFACE

W. A. Dozier, Jr.

Director of Public Relations

The purpose of this article is not to get into a long discourse on semantics although some people might argue that semantics are an integral part. The one purpose here is once more to point up the grave necessity of looking below the surface of the sugar-coated words used so freely and so carelessly by many people.

The point at issue was brought to mind by a study published by the Brookings Institute titled "The Cost and Financing of Social Security" by Lewis Meriam, Karl Schlotterbeck, and Mildred Maroney. It seems that using the term Old Age and Survivors Insurance to designate one of the Social Security programs of the government has created a fictitious idea in the minds of many people, the present writer being one who was so mislead. Again, the purpose here is not to discuss the underlying principle of redistribution of the wealth on which such social security programs are predicated, but instead the aim is to look at the use of the word insurance.

Because this plan was called insurance, many people have falsely assumed that it meant insurance with proper reserves as will be found in commercial insurance plans.

In private voluntary insurance plans the protection for the insured persons rests on real reserves of capital, which reserves are invested thus becoming invested assets. These assets are of course earning money for the company. This, however, is not true with O. A. S. I. At the beginning of this plan receipts greatly exceeded expenditures. This excess, instead of being invested where there could be an earned return, was "borrowed" by the government and in its place was put government bonds. Thus the reserve of O. A. S. I. is in government bonds which are no more than a debt against the government and naturally, as such, are not earning any real value, that is value which can be measured only in terms of increased production. The only means the government has of paying these debts (bonds) is through taxation; therefore the protection for the insured persons rests solely on the future taxable capacity. And thereby hangs a tale. It is this situation that has caused some writers to say the older generation is riding its children piggy-back to the grave. Also this situation is the cause for frequent references to be found in news articles which say such and such a person is advocating a pay-as-you-go plan for various social security measures.

But back to the point at hand. It seems that too many people may have done as

this writer, that is assumed that the word insurance meant what is commonly accepted. Now why would such a mistake be made. Perhaps it was pure carelessness and the fact that people never seem to learn not to accept things at face value. In this instance there was another factor too. Such a plan as O. A. S. I. took one into the realm of fiscal policies, which ground is not too familiar to most people. To have gotten the real facts would have taken time and effort, and perhaps a touch of laziness crept in. It certainly is not the fact that such ideas are incomprehensible or that they are not sub-

ject to the usual rules of good sound business. No matter what the situation, it can be brought back to simple terms and subjected to a few underlying principles which one uses in determining good or bad business policy.

Perhaps the reasons for the mistake are not important if this example can serve to cause people to look under the surface. Then again the outcome, by and large, will not be borne by the present generation; but this final outcome and its effects will have to be borne by all who live under this government at that time.

WOMAN'S AUXILIARY

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Officers and Committee Chairmen of the Woman's Auxiliary to the State Medical Association for 1950-1951 are as follows:

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STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

PROGRESS AGAINST THE GREATEST OF KILLERS

Possibly you do not know how serious a problem heart disease is. You may or may not know, for example, that it is killing more people than any other single disease or condition. You may or may not know that considerably more Alabamians die from this cause than from any other two you could name. You may or may not be surprised to be told that one death out of every three is due to diseases of the heart and blood vessels. (The two types of illness are so closely associated that it is difficult to differentiate between them.) Health authorities tell us that probably one American out of every twenty suffers from one of these diseases. Since they are particularly diseases of middle and old age, their victims in the active, productive period of life naturally represent a much higher proportion of those in that age group.

Few of us indeed have not felt keenly the grief that heart disease brings to the families and friends of its victims. Few there are who have not lost parents, brothers or sisters to this master killer. And personal sorrow is not all of the tragedy it brings. For it also brings financial reverses and disappointments of many kinds. By killing especially the active, the ambitious, the energetic and the successful, it ends or greatly curtails incomes that have stood as strong bulwarks against economic need. It has

forced wives and mothers to leave the comfort and peace of their homes and sent them out to seek jobs. It has forced young people to give up their fond dreams of education and driven them into the job market. It has robbed businesses of their key executives. It has destroyed, almost in the twinkling of an eye, the fruits of years of hard-won experience. It has left youngsters without the guidance and companionship of devoted parents. There is no doubt that many a case of juvenile delinquency could be traced, not primarily to evil companions but to a fatherless or motherless childhood due to heart disease.

Like certain other diseases, heart disease means more than one form of illness. Different though they are, and, to a large degree, unrelated, they have one important thing in common: They all involve the heart and blood vessels.

All of those different forms of heart disease play a part in the health and happiness picture of our people, of course. But three of them stand out far in the lead. They alone are said to account for more than nine cases of heart disease out of every ten. They are: (1) rheumatic heart disease, a tragic fruit of that tragic disease of childhood, rheumatic fever; (2) coronary heart disease, due to narrowing and hardening of the arteries involving the heart; and (3) hypertensive heart disease. This last-mentioned is due to what laymen know and fear as high blood pressure. Medical men know it as hypertension.

Heart disease authorities estimate that congenital malformations of the heart are

responsible for about one heart disease case out of every 50. As already pointed out, this condition exists at birth. Until comparatively recently, the form of heart disease due to late-stage syphilis was a significant factor in the broad heart disease picture. But its importance has been considerably reduced in recent years. For that we should thank the aggressive campaigns that have been waged against syphilis, campaigns in which Alabama has taken the lead.

Rheumatic fever itself is not entirely a heart disease. But it has a particular affinity for the heart. When it attacks that vital organ, the victim of rheumatic fever becomes a victim of a much more serious condition, rheumatic heart disease. Contributing to heart disease mortality and disability at all ages, it is said to cause 90 per cent of all heart disease cases in youngsters.

Rheumatic fever (no small-scale killer in its own right) and rheumatic heart disease are said to bring death to almost five times as many people as poliomyelitis (infantile paralysis), diphtheria, whooping cough, measles, scarlet fever and cerebrospinal meningitis combined. At this moment, we are told, more than a million Americans are victims of these twin killers.

As you may have assumed from what has already been said, rheumatic fever is primarily a disease of childhood. However, it does not often attack those under five years of age. Unfortunately, the first attack does not confer immunity to later attacks. Either or every one of them may leave scars on the heart valves and in the heart muscles. It is those scars that bring on rheumatic fever's dangerous aftermath, rheumatic heart disease.

Fortunately, the rheumatic heart disease victim is by no means doomed to early death. He indeed may live out a normal life span. And he need not have to act like a sick or half-sick person. But he must be careful for a long time. And he should have proper medical care.

We find a somewhat different problem in high blood pressure, or, to use the doctors' term, hypertension. This condition claims most of its victims, not among the young but among the middle-aged.

Whenever blood pressure becomes abnormally high, the heart's normal task is

greatly increased. This added load may cause it to dilate and enlarge. And, like a faithful animal or a piece of machinery, a heart that has its work load boosted is more likely to wear out than one that must carry only a normal burden.

Many people become frightened when their doctors tell them they have high blood pressure. Their concern can readily be understood. But there is no occasion for panic. High blood pressure is often due to a specific cause, which can be corrected. Even when it is not, it is possible, by careful living, to maintain a good state of general health. Naturally, at such a time a physician's guidance is all-important. And it is also important, highly important, to follow his advice.

We move up the age scale somewhat when we consider the third and final member of this dangerous heart trio. Hardening of the arteries is by no means unknown to those in the forties. As a matter of fact, many of its victims are in that age group. But it is found most often among those who are somewhat older, specifically those on the older side of 50.

The name given to this condition explains it pretty well: The walls of the arteries harden. A crude illustration of what happens might be seen in a rubber tube. When it is new, it is soft. It bends easily. It yields readily to changes in pressure both inside and outside. But leave it on a shelf for several years. Or expose it to severe atmospheric conditions. It loses its pliability, becoming rigid and stiff. If you try to bend it, it breaks in your hand. It does not expand to allow a greater volume of water to flow through. Nor does it contract when that stream diminishes to a trickle. It looks and feels more like a pipestem than a length of rubber. The arteries undergo a similar, though less marked, change when one gets hardening of the arteries.

There is also another important change. The arteries become thickened, as well as hard. Here again we might use a length of rubber tubing to make the point clear. When it is new, a fairly large stream of water—say about the size of a pencil—will flow through it easily and steadily. But, after months of constant use, it becomes partially clogged. Solid particles in the water drop to the bot-

tom and rest there. Other particles become attached to the sides and top. These attract others, and the tube becomes thicker and thicker, the thickening being all on the inside. As this process goes on, the channel becomes smaller and smaller. What happens to that rubber tube, generally speaking, is what happens to the arteries when one has hardening of the arteries, or arteriosclerosis. Like the water in the rubber tube, the blood in the arteries is decreased. This causes an inadequate blood supply to reach those parts of the body they feed.

Hardening of the arteries also has another danger, more acute and more serious. Again like the water in the rubber tube, the blood finds it more difficult to flow through thickened arteries than through those in normal condition. There is a much greater danger of a complete blocking of the flow. In the case of the blood flow, the danger is increased by the blood's tendency to clot. When one of these clots forms in a thickened artery, there may be a complete blockage. Then the blood supply for a portion of the heart stops entirely. Serious heart damage often results.

When hardening of the arteries reduces the flow of blood to the heart muscle, the direct result usually is a case of coronary heart disease. Then, or soon afterward, the victim begins experiencing the characteristic symptoms of angina pectoris. These consist for the most part of sharp pain in the center of the chest. They usually follow unusual exertion and disappear, or diminish in intensity, after rest. The condition known as coronary thrombosis—thrombus is the medical name for clot—usually results from a sudden closing of an artery supplying the heart muscle. Such closing, of course, is due in turn to the formation of a clot in the artery.

What has been said of other forms of heart disease may be said of the types we have just been considering. They are not necessarily fatal. They do not necessarily mean a shortening of the life span. They do not involve permanent invalidism or semi-invalidism. But they demand careful living.

The broad heart disease picture is not black. It is true that heart disease mortality tends to continue upward at a time when death rates for other forms of illness are dropping steadily. Nor can we gainsay what

was said at the outset of this paper, that heart disease is by far the greatest mass killer ever to afflict the human race. But there are lights in the darkness. They are rather feeble, but they are rich in promise. Others are expected to appear as time goes on.

One of the marked advances in the warfare against heart disease was the establishment of the National Heart Institute. It was brought into being by act of Congress and made an agency of the U. S. Public Health Service, which is also hard at work unearthing the secrets of poliomyelitis, cancer, mental sickness and numerous other forms of illness. Another sign of progress is the organization of the American Heart Association. This is a voluntary national agency launched to do for the curbing of heart disease what the National Tuberculosis Association has long done so well in the struggle against the Great White Plague. There are other signs of progress. State departments of health, in Alabama and elsewhere, are coming to grips with this problem. (No doubt you have heard or read about the campaign now under way in this state to detect marked heart irregularities by studying x-ray pictures of the chest made primarily for the tuberculosis diagnostic program.) The so-called "wonder drugs"—the sulfa drugs, penicillin, etc.—have been used with considerable success in certain types of heart disease. Even the surgeon's skill has entered the struggle, frequently tipping the delicately balanced scales.

The main battle, however, still lies ahead. As individuals, we can do our important bits by treating our hearts as well as we can. We can also help mightily by helping the official and unofficial agencies fighting it.

Cancer Research—A cancer research program has been set up by the Medical Division of the Oak Ridge Institute of Nuclear Studies. A small research staff, a 30 bed clinical unit, laboratories, treatment rooms, and radiation storage facilities have been made available. The program is designed to study treatment of neoplasms by radiation from radioactive isotopes. Through the co-operation of southern medical schools, patients treated will be selected by referral only from staff members of the participating medical schools in 13 southern states. In the referrals they will be guided by the principle that no patient will be considered for admission if the neoplastic condition is amenable to effective surgical or roentgen therapy.—*Am. J. Pub. Health*, Aug. '50.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

JUNE 1950

Examinations for diphtheria bacilli and Vincent's	163
Agglutination tests (typhoid, Brill's and undulant fever)	1,459
Typhoid cultures (blood, feces and urine)	472
Examinations for malaria	1,975
Examinations for intestinal parasites	3,629
Serologic tests for syphilis (blood and spinal fluid)	27,668
Darkfield examinations	9
Examinations for gonococci	1,823
Examinations for tubercle bacilli	3,166
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	139
Water examinations	1,760
Milk and dairy products examinations	4,097
Miscellaneous	1,599
Total	47,960

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1950

	May	June	E. E.* June
Typhoid	4	4	8
Undulant fever	1	5	8
Meningitis	7	8	7
Scarlet fever	28	22	29
Whooping cough	162	162	170
Diphtheria	10	11	10
Tetanus	3	8	4
Tuberculosis	263	221	253
Tularemia	0	2	1
Amebic dysentery	9	3	1
Malaria	7	18	260
Influenza	232	34	61
Smallpox	0	0	0
Measles	280	174	428
Poliomyelitis	7	13	8
Encephalitis	0	0	0
Chickenpox	293	150	44
Typhus	17	15	23
Mumps	185	168	91
Cancer	365	342	196
Pellagra	0	3	3
Pneumonia	197	131	147
Syphilis	1020	627	1364
Chancroid	12	9	19
Gonorrhea	331	354	594
Rabies—Human cases	0	0	0
Positive animal heads	18	26	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

Today, because of procedures which have become routine, the private physician's office is a bulwark against such diseases as smallpox and diphtheria. In like manner, it can become one of the most effective agencies for tuberculosis control.—Christie, *Pub. Health Rep.*, June 2, '50.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

THE TYPHUS CONTROL PROGRAM IN THE SOUTHEASTERN COUNTIES

Contributed by

J. P. Gilbert

Sr. Pub. Health Eng.

Following the recognition of typhus (Brill's) fever, an increasing number of cases have been reported from year to year. It was suspected that rat ectoparasites were responsible for the transmission of the disease from rats to man. This was confirmed by studies made in Alabama by Havens and Maxcy which indicated the existence of a rodent reservoir with accidental transmission to man by blood-sucking ectoparasites or their excreta.

Originally typhus was an urban disease primarily, most of the cases being reported from seaport towns. It has since spread along lines of communication to inland towns and from there into rural areas. At the present time the majority of the typhus cases in Alabama are reported from the southeastern portion of the state, to be attributed in part to the extensive peanut production of the area which contributes a constant and abundant food supply to support the rat population. This, together with a relatively milder climate found in this section, affords optimum conditions for the support of a large rat population.

In the past, suppressive measures in the control of typhus fever were in the form of rat poisoning campaigns carried on in the towns, and usually limited to the business areas. During the depression, with an abundance of labor available, mass rat trapping and poisoning campaigns were carried out. Following this work the number of reported cases of typhus in Alabama dropped, but then steadily increased in the following years to reach a new high of 892 cases in 1944.

With the introduction of DDT (dichlorodiphenyl-trichloroethane) and the discovery of its efficacy as a pulicide, an experimental program was planned in the control of typhus fever through the reduction of the rat flea.

The U. S. Public Health Service in the fall of 1945, cooperating with the various states reporting a large number of typhus cases,

allotted funds to develop programs of typhus control in certain preapproved counties within the states showing a high incidence of typhus morbidity. In those counties participating, local governing bodies appropriated additional funds to supplement allotments made to the counties to carry out the proposed typhus program.

Since the beginning of the program to date four southeastern counties having county-wide distribution of typhus cases have carried on a complete program with DDT dust for flea control, together with poisoning and gassing of rats for control of rat infestation. All premises within these counties now receive two or more treatments each year. In other southeastern counties approved for this work local appropriations have permitted only limited and sporadic treatments of premises within the towns and rural areas.

Evaluation studies have been carried on through the trapping of rats for the determination of the percentage of positive rat bloods and the flea index present. These records reveal that in those counties receiving complete treatments the percent of positive rat bloods being obtained is less than 2% with a minor degree of flea counts, while in those adjoining counties receiving a limited treatment positive rat bloods were obtained as high as 40% together with a relatively high flea index. Further, in the former counties the typhus cases in the human population have shown a considerable decrease while the cases reported from the latter counties have continued at the same rate or increased.

It is felt that in those counties where an intensive and continuous attack has been carried on, the program could now be reduced to one complete treatment a year of all premises in the county with DDT powder and accompanying rat extermination measures to achieve a high degree of typhus control.

Observations and spot treatment of past typhus foci and known areas of heavy rat infestation should be sufficient in those counties following the initial complete coverage of the county.

A chart of the reported typhus cases by months shows that the greatest increment in the number of typhus cases starts in the

month of June. Evaluation studies of the residual value of DDT applied in the control of rat fleas show good control for four months following the initial application, with some additional control for an even longer period of time. These factors, together with the knowledge that rats tend to disperse to the fields and away from barns, cribs, etc., in the spring, would indicate that for best results the county DDT dusting and rat poisoning program should be completed in the months prior to June.

From past experience it is evident that to obtain an appreciable degree of typhus control in counties reporting a high incidence of typhus fever it is necessary to initiate a continuous program with complete treatment for a minimum of two years. Following the initial treatments, close surveillance, together with spot treatment where the need is indicated, should prove sufficient to maintain a decreased typhus case rate.

Coronary Occlusion—Since coronary artery disease so frequently complicates diabetes mellitus, this combination of diseases bears consideration. It is rather infrequent that one sees diabetic coma or acidosis complicated by coronary occlusion, but if they do occur much ingenuity is necessary for treatment. It has been pointed out by Cruickshank that the heart of a diabetic cannot utilize blood sugar unless insulin is added in physiologic doses. Also Raab and Rabinowitz showed that immediately following coronary occlusion abnormal glucose tolerance curves could be demonstrated and that these returned to normal in 67 per cent of cases. They attributed this to disturbances in the vegetative nervous centers of the brain. Others attribute abnormal and transient glycosuria during coronary thrombosis to edema of the medulla and lower pons, also to reflex spasm of already diseased pancreatic vessels.

In reviewing this problem, Granirer advises that the therapy of diabetic acidosis complicated by myocardial infarction should be based upon energetic attempts at control of the acidosis, particularly in the early stages of the disease. Insulin should be given generously especially in the first six hours with normal saline by vein and additional fluids by mouth to restore fluid and electrolyte balance. Relatively high blood sugars and glycosuria can be maintained, but the chief object is to combat the acidosis, early and rapidly. Other therapy should include bed rest for an extra period of time even though further sedation is necessary. Oxygen should be given for several additional days and there is no contraindication to anticoagulant therapy.—Yancey and Hunter, *New Orleans M. & S. J.*, July '50.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR APRIL 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During April 1950			April Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	5772	**	**	22.6	26.0	24.8
Total stillbirths	168	**	**	28.3	26.4	29.3
Deaths, stillbirths excluded	2304	1292	1012	9.0	8.7	8.3
Infant deaths:						
under one year	238	113	125	41.2	42.2	37.5
under one month	162	80	82	28.0	27.4	25.7
Cause of Death						
Tuberculosis, 001-019	45	18	27	17.6	26.7	31.7
Syphilis, 020-029	15	3	12	5.8	4.7	9.9
Dysentery, 045-048	5	3	2	2.0	1.2	***
Scarlet fever, 050						0.4
Diphtheria, 055					0.4	0.4
Whooping cough, 056	4	3	1	1.6	1.2	2.4
Meningococcal infections, 057					0.8	0.4
Poliomyelitis, 080, 081					0.4	0.4
Measles, 085	3		3	1.2	5.1	1.2
Typhus fever, 100-108						1.2
Malaria, 110-117	2		2	0.8		
Malignant neoplasms, 140-200, 202, 203†	244	174	70	95.7	77.3	78.1
Diabetes mellitus, 260	29	14	15	11.4	11.8	12.8
Pellagra, 281	1		1	0.4	1.2	1.2
Vascular lesions of central nervous system, 330-334	245	129	116	96.1	100.4	94.0
Other diseases of nervous system, 300-318, 340-398	36	19	17	14.1	14.1	11.1
Rheumatic fever, 400-402	3		3	1.2	2.0	2.4
Diseases of the heart, 410-443	716	442	274	280.9	256.9	203.5
Diseases of the arteries, 450-456	27	17	10	10.6	7.1	13.1
Other diseases of the circulatory system, 444-447, 460-468	31	14	17	12.2	14.1	1.6
Influenza, 480-483	41	25	16	16.1	13.7	7.9
Pneumonia, 490-493	109	53	56	42.7	38.0	32.5
Bronchitis, 500-502					1.6	1.6
Appendicitis, 550-553	3		3	1.2	3.1	1.6
Intestinal obstruction and hernia, 560, 561, 570	5	5		2.0	7.4	5.2
Gastro-enteritis and colitis (under 2), 571.0, 764	8	3	5	3.1	2.7	1.6
Cirrhosis of liver, 581	10	6	4	3.9	3.9	5.2
Diseases of pregnancy and childbirth, 640-689	9	2	7	15.2	17.6	29.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	2		2	3.4	5.9	7.7
Congenital malformations, 750-759	20	18	2	3.5	4.8	4.5
Accidental deaths, total, 800-962	163	102	61	63.9	53.3	63.1
Motor vehicle accidents, 810-835, 960	67	49	18	26.3	21.2	24.6
All other defined causes	409	206	203	160.4	158.1	171.7
Ill-defined and unknown causes, 780, 793, 795	121	36	85	47.5	50.2	53.1

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; puerperal causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the April report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

The Crippled Child—The needs of the crippled child may be formulated in terms of the normal: (1) A means of communication to make known his immediate wants and to provide an avenue for education. The deaf child will require special sense training; the cerebral palsied and bulbar polio must learn control of muscles of speech and respiration; the aphasic, by dint of countless repetitions, must set up new engrams for each experience. (2) The ability to care for himself, to feed, dress, perform bathroom activities, apply braces, write, propel a wheel chair, and operate household appliances necessary for daily living. It is truly amazing how much can be done with feet, or with a stick held between the teeth, when arms and hands cannot function. (3) Education, as the basic step in reaching the ultimate objective of self-sustainment. Special teaching techniques may have to be used and various therapies integrated with the academic program, still the crippled child derives as much benefit and is as deserving as his normal sibling. Psychometric examination aids not only the teacher but everyone who comes in contact with the child. Special facilities for those children who cannot compete with a normal group would not only be good treatment, but sound economics as well. (4) Security, the feeling of belongingness, of being included in both the family circle and a community group. Too often the crippled child is placed on the fringe, and this is brought about by overprotection just as frequently as it is by neglect and misunderstanding. The youngster who is given a share in competition in a group of his own level obtains the necessary stimuli for growth and development which can be obtained in no other way. The process of socialization is many-faceted and it cannot be accomplished except within a group which accepts the individual on his own merits. (5) Satisfaction of emotional needs—of loving and being loved—of accomplishment however small, of excelling in one particular activity. A freckle-faced boy has known the highest joys of success because he was the only one in the ward who could learn to wiggle his ears. Being given recognition and credit for this achievement has helped him to attempt somewhat more useful activities which previously were not deemed worth the effort. (6) Ambulation. This is the point about which parents are first concerned and the one at which therapy is usually first directed; and yet it is probably the last in importance. Should a child be forced to endure surgery, a great deal of therapy, or prolonged bed rest if there is no place to walk, or if his discipline is so bad that he is harmful to himself and to others, or if he cannot take care of himself after he gets there? The ability to walk is little appreciated by you and me; we would miss it if it were suddenly taken away but we could still carry on our daily activities in a fairly satisfactory manner from a wheel chair.—Gillette, J. M. A. Georgia, Aug. '50.

BOOK ABSTRACTS AND REVIEWS

Human Biochemistry. By Israel S. Kleiner, Ph. D., Professor of Biochemistry and Director of the Department of Physiology and Biochemistry, New York Medical College, Flower and Fifth Avenue Hospitals; Formerly Associate, The Rockefeller Institute for Medical Research, New York. Cloth. Price, \$7.00. Pp. 649, with 77 text illustrations and 5 color plates. Second edition. St. Louis, The C. V. Mosby Company, 1948.

This textbook for medical and dental students has been revised. The second edition follows quite closely the plan of the first edition which was published in 1945.

In the preface of the first edition the author explains his philosophy of teaching biochemistry: "The student . . . learns that advances in every branch of medicine, surgery and dentistry have been made as a result of biochemical research, that the human body is applied biochemistry . . . that biochemical discoveries are more and more responsible for progress in diagnosis and therapeutics." He attempted to emphasize the clinical aspects of biochemistry but he stated that he hoped that the text was neither too advanced nor too elementary for medical and dental students.

A concise new chapter, "Chemical Structure in Relation to Biological Phenomena," which includes "detoxications," has been included in the second edition. Chapter twenty-five on "Recent Clinical Applications" includes both liver and kidney function tests, the kidney and blood pressure, dental caries, biochemistry of inflammation and tumors, acid phosphatase, antibiotics and chemotherapy. The revision includes the addition of numerous significant discoveries. Among the seventy-seven illustrations are several excellent black and white photographs of vitamin deficiencies in both man and animals. Five color plates are also included.

The author's many years of experience as a teacher of biochemistry have made it possible for him to write a really fine textbook of biochemistry.

Emmett B. Carmichael

The Principles and Practices of Rehabilitation. By Henry H. Kessler, M. D., M. A., Ph. D., F. A. C. S., Newark, N. J. Director, Kessler Institute for Rehabilitation; Attending Orthopedic Surgeon: Hospital and Home for Crippled Children, Newark City Hospital, Newark; Beth Israel Hospital, Hasbrouck Heights Hospital; President, National Council on Rehabilitation; President, International Society for the Welfare of Cripples; Fellow of the American Academy of Orthopedic Surgeons, and Diplomate of the American Board of Orthopedic Surgery; Member New Jersey Rehabilitation Commission; Captain, U. S. N. R. (Inactive). In collaboration with other authors.

Cloth. Price, \$9.00. Pp. 448, with 132 illustrations, 1 plate in color. Philadelphia: Lea & Febiger, 1950.

From wars, with their mutilating effects, has come a specialty which gives to the disabled a new hope for restoration to as normal a civilian existence as his deformity permits. This new field of endeavor has reached beyond the scope of war and trauma to the medical disabilities of cardiology and pulmonary diseases, paralytics, the psychiatric patient, and other diseases to make alive again for the afflicted the promise for self-dependency and a respected place in the life of the community. No longer need the deformed or disabled fear the ancient persecutions; private and governmental agencies have seen their plight and have made possible a new vision. No longer does therapy end with the removal of a plaster cast or with the last prescription. New aids in the medical field, such as physical medicine, occupational therapists and vocational counsellors, with their training and placement bureaus, have joined hands with the physician and surgeon to complete the restoration of the ill and disabled.

Dr. Kessler, a pioneer in this field of rehabilitation, has in his usually thorough fashion collaborated with 20 other celebrated individuals in producing a reference book on rehabilitation. The conciseness and clarity with which each contributor has presented his individual effort and the extensive bibliography some have employed and listed should make this work a handy desk volume for all physicians and associated workers whose practices must necessarily embody the principles and practice of rehabilitation.

Elias N. Kaiser, M. D.

The Practice of Medicine. By Jonathan Campbell Meakins, C. B. E., M. D., L. L. D., D. S. C. Formerly Professor and Director of the Department of Medicine, McGill University. Fifth edition. Cloth. Price, \$13.50. Pp. 1500, with 500 illustrations, 50 in color. St. Louis, Mo.: The C. V. Mosby Company, 1950.

This most recent edition of a well known textbook covers a wide range in the practice of medicine. It is not intended for the specialist, nor is it encyclopedic. It is rather for students and for practitioners, to assist them in solving the numerous puzzles and problems with which they are daily confronted. There are many illustrations and charts which help keep the presentations simple and easy to understand. At the end of each chapter is an extensive bibliography for further reference.

The arrangement of the book, by diseases of the various systems and organs, lends itself to simplicity. There is good coverage of the respiratory system, the circulatory system, the uri-

nary system, the hematopoietic system and the gastro-intestinal tract, including the liver and bile passages. There is excellent coverage of diseases of nutrition and of metabolism. The chapter on infectious diseases is complete. The chapter on allergy is brief but adequate for a volume of this type.

In this fifth edition, Dr. Meakins has made certain changes. The concise section on psychiatry found in previous editions has been replaced by one on psychosomatic medicine. However, he continued the chapter on the nervous system which contains classical descriptions of neurologic lesions.

In accord with new developments, the chapter on chemotherapy and antibiotics has been brought reasonably up to date. Rapid advances in this field have somewhat complicated the descriptions of infections. In order to reduce reduplication, a chapter has been devoted to this subject, and included are the principles of chemotherapy and antibiotics, together with their indications and manner of use. The data on aureomycin and chloromycetin are brief and inadequate.

The chapter on the ductless glands has been largely rewritten. An attempt has been made to clarify the classical descriptions of some of the diseases of these organs in order that it may be appreciated that there are quantitative and qualitative variations in their functions and that their interrelationships cannot be ignored.

This reviewer feels that this volume, or one of equivalent merit, should be on the shelf of every practitioner of medicine.

Joseph Weinrib, M. D.

An Atlas of Amputations. By Donald B. Slocum, M. D., M. S. Orthopedic Surgeon, Sacred Heart General Hospital, Eugene, Oregon; Branch Consultant in Orthopedic Surgery, U. S. Veterans' Administration; Formerly Chief of Amputation Section, Walter Reed General Hospital, Washington, D. C. Cloth. Price, \$20.00. Pp. 562, with 564 figures. St. Louis: The C. V. Mosby Company, 1949.

This monumental effort by the author has given to the surgical world a worthy reference and aid in amputation surgery. Despite Dr. Slocum's modest declaration that "no attempt has been made to create an encyclopedia of amputation subjects," this volume is truly an encyclopedia of those indications and procedures which have weathered experience and time.

In "Orientation" the author emphasizes that amputation surgery must draw on all phases of medicine for any procedure from its beginning to its completion. The weighing of prolonged convalescence from multiple surgical procedures as an alternative for immediate amputation surgery is adequately discussed. Indications for amputations in trauma, infection, thermal injuries, peripheral nerve injuries, and congenital deformity are amplified. In "Surgical Considerations and Surgical Technics" are reviewed the principles of wound healing and the surgical care of individual tissues, surgical preparation,

and anesthesia. Procedures are precisely described and clearly portrayed in accompanying photographs and outline drawings.

The value of this work is greatly enhanced by a most thorough study of the convalescent period following amputation surgery. As a matter of fact, this subject occupies about one-half of the 562 pages. It is so thoroughly covered that it would have made an excellent volume in its own right. The complications and their treatment are detailed. It is stimulating and encouraging to see photographically the total rehabilitation of the amputee when not long in the past an amputation was considered a devastating procedure which relegated the patient to a state of despondency and unemployment.

Congratulations are extended to Dr. Slocum for giving us this invaluable addition to the surgical library. The C. V. Mosby Company is complimented for publishing such a detailed study in readable and attractive format.

Elias N. Kaiser, M. D.

Sherer's Manual of Human Dissection. Edited by Charles E. Tobin, Ph. D., Associate Professor of Anatomy, University of Rochester, School of Medicine and Dentistry. Second edition. Cloth. Price, \$6.50. Pp. 273, with 79 illustrations. Philadelphia: The Blakiston Company, 1950.

This is a textbook of 273 pages which covers the field of human dissection, initiated in a manner and method easy for the student to understand. It does not have to be used in conjunction with, or with reference to, any descriptive text. It is designed as an autonomous unit and it is a very thorough presentation in view of the purpose for which it is written—a manual of human dissection. This manual is a successful work on the part of the author to alleviate the present situation of the increased number of students and the decrease in time allotted for gross anatomy in the medical schools of the United States.

The text is designed for speed in dissection and the comprehension of anatomy in the shortest time possible. All detailed descriptions are omitted, yet sufficient space is allotted for complete understanding.

The book is arranged in the following major chapters: Pectoral Region, Axilla, Triangles of Neck, Back, Head and Neck, Larynx, Thorax, Abdomen, Penis, Scrotum and Testes, Inguinal Region, Abdominal Cavity, Diaphragm and Posterior Abdominal Wall, Perineum—Male and Female, Pelvis Minor—Male and Female, Superior Extremity, and Inferior Extremity. Each important structure, in these chapters, is written in bold print, which is a time saver and easy to index by chapters or structures. It is not only a good book for the student but is excellent for the surgeon who would like to have a quick refresher course in a few minutes before an operation.

The illustrations could be improved by appearing in multicolor; and, although there could be more illustrations, which would not necessari-

tate the turning back of pages, the illustrations which appear in shades of black and gray are clear and excellent.

This is a text which should be in the library of every student of anatomy and should be available near the operating room of every hospital.

Ernest P. Jabour, M. D.

The Diagnosis and Treatment of Brain Tumors and the Care of the Neurological Patient. By Ernest Sachs, A. B., M. D. Second edition. Cloth. Price, \$15.00. Pp. 628, with 345 illustrations, 10 in color. St. Louis: The C. V. Mosby Company, 1949.

The second edition of this book on neurosurgical conditions is written primary for the medical student, house officer and the general practitioner. The author has wisely combined his two books.

This edition includes concise description of pneumoencephalography, electroencephalography, angiography, intracranial aneurysms and intraventricular tumors. In addition, the originally brief section on instruments and technique has been greatly expanded. Two entirely new chapters briefly discuss miscellaneous neurosurgical subjects including spinal cord tumor, subdural hematoma, brain abscess, trigeminal neuralgia, hydrocephalus, compound fractures of the skull, cranioplasty, Jacksonian epilepsy, ruptured intervertebral disc, chordotomy, spina bifida, peripheral nerve repair, spinal cord injury and rhizotomy.

Sachs, who retired from active surgical practice in 1949, writes in a blunt, dogmatic and rambling style. He presents his viewpoint in a firm manner and many neurosurgeons will find many points of disagreement. The author supplements the didactic material with detail reports of successfully, as well as unsuccessfully, treated patients which aid in presenting an honest picture of the limitations of present day neurosurgery.

Donald B. Sweeney, M. D.

Textbook of Anatomy and Physiology. By Carl C. Francis and G. Clinton Knowles. Second edition. Cloth. Price, \$6.25. Pp. 624, with 365 illustrations, 31 in color. St. Louis: The C. V. Mosby Company, 1950.

This is a textbook for nurses. The subjects are integrated and presented as one, an "Anatomy-Physiology." The text is well written and comprehensive enough for anatomy and physiology on a collegiate level. Numerous charts, drawings, photographs, and tables excellently illustrate the text. The method used by the authors in correlating and presenting these usually dry subjects makes a much more interesting and easier understood textbook.

Hugh V. Bell, Jr., M. D.

Breast Deformities and Their Repair. By Jacques W. Maliniac, M. D. Cloth. Price, \$10.00. Pp. 193. New York: Grune & Stratton, 1950.

This is a practical book for a surgeon interested

in mamma surgery. Surgical details are discussed, and techniques known to give satisfactory results are minutely recorded.

Discussed by chapters are (1) folk lore of breast and history of mamma plastic procedures, (2) anatomy and embryologic and physiologic development, (3) classification, etiology and symptomatology of ptosed and hypertrophied breasts, (4) surgical indication and conservative treatment in ptosed and hypertrophied breasts, (5) essential elements in repair of ptosed and hypertrophied deformities, (6) procedures for transposition in ptoses and hypertrophy, (7) mammectomy with and without free transplantation of nipple, (8) other anomalies of the female breast, and (9) gynecomastia.

This book is brief, 193 pages, with many illustrations, and very readable. It is highly recommended for anyone interested in breast surgery, including general surgeons who are not interested in reconstructive work.

H. H. Meadows, Jr.

Insect Stings—There is a significant number of people who have dangerous reactions to insect stings, and adequate protection can be achieved through desensitization to an extract of the specific insect in question. Unfortunately, however, the protection does not usually last long, and I believe it is advisable to give maintenance doses of the antigen until there is evidence that it is safe to stop them. Such evidence might consist of a person being in a different environment where a sting would be unlikely, or his having had repeated stings over a long period of time without untoward reaction.

The necessity of continuing treatment might be illustrated by one case. A young farmer in 1944 was given wasp desensitization because of several near fatal stings. He was cautioned not to stop treatment without consulting me. Treatment was soon taken over by his family physician and finally by the patient himself. During that time, and even for a year or so after treatment was stopped, he had little if any trouble from stings. However, they began causing more and more local swelling and then systemic symptoms such as weakness, pallor, dyspnea, and near collapse. He decided to reinstitute treatment when he got time. He never made it. He died within thirty minutes after a sting suffered while he was in the pasture some distance from the house. He did not have adrenalin with him. Although it was given at once after he got home, the pulmonary edema and emphysema were then irreversible.

I know of no fatal case in which there had not been some untoward reaction from previous stings. Thus, the patient is to some extent forewarned. In addition to providing desensitization, I advise hypersensitive patients, particularly ranchers and farmers, to have ampules of adrenalin and a syringe in their work truck, and I make sure they know how to use it.—Wolf, *Texas State J. Med.*, Aug. '50.

AMERICAN MEDICAL ASSOCIATION NEWS

RESPIRATOR 'BREATHES' FOR POLIOMYELITIS VICTIMS

A respirator which enables victims of the bulbar type of poliomyelitis to breathe almost in a natural manner has been developed by a group of Boston doctors.

In contrast to older forms of artificial respiration by means of pressure, the new respirator operates through electrical stimulation of a point on either of the phrenic nerves, which run down each side of the neck into the diaphragm.

Doctors Stanley J. Sarnoff, James V. Maloney, Jr., Benjamin G. Ferris, Jr. and James L. Whittenberger, and Charlotte Sarnoff, all of the Harvard School of Public Health, describe the use of the respirator in the August 19 Journal of the American Medical Association.

Acute bulbar poliomyelitis is the form of the disease in which the enlarged upper part of the spinal cord, popularly called the "bulb," is affected. Since this area contains vital centers that control respiration and the heart, involvement can be severe enough to interfere with breathing. It has become general practice not to place a patient so affected in a tank respirator, since this may increase the respiratory difficulty, the doctors say.

"Supportive therapy, with painstaking attention to maintaining an unobstructed airway, has remained the cardinal principle in the management of this form of the disease," the doctors point out. "Phrenic stimulation has not been used previously in bulbar poliomyelitis.

"Respiration was produced by applying a moistened, cloth-covered electrode externally over the skin at the site of the motor point of the phrenic nerve."

The first patient to receive electrophrenic respiration was a 9-year-old boy who was brought to the Children's Hospital in July, 1949. He was acutely ill and spontaneous respiration had become highly irregular.

"The patient's residual paralysis gradually disappeared almost completely," the doc-

tors report. "In December 1949 he could swallow, had gained weight almost to his presummer level and had recovered sufficiently to engage successfully in his favorite sports, ice skating and ice hockey."

Successful use of the respirator on eight other patients is reported by the doctors. However, they add:

"The usefulness of the electrophrenic respirator cannot be considered as established in bulbar poliomyelitis until additional experience has been obtained, but the data are encouraging. It is obvious that one phrenic nerve must be wholly or partially uninvolvement by disease if effective electrophrenic respiration is to be performed.

"The extraordinary extent and severity of central nervous system derangement that can exist and still be reversible if the critical demands of the respiratory and circulatory systems are met has been demonstrated. The electrophrenic respirator consistently and strikingly diminished the restlessness and hypertension in one patient and achieved similar results in others."

The study was aided by a grant from the National Foundation for Infantile Paralysis, Inc.

RESENTMENT CAN CAUSE HIVES, DOCTORS' STUDY SHOWS

A close relationship between an attitude of resentment and development of hives is shown by a study made by two New York doctors.

"Thirty unselected cases of chronic hives were investigated to determine the relationship between stressful life situations and processes responsible for the disease," Drs. David T. Graham and Stewart Wolf of Cornell University Medical College say in a recent issue of the Journal of the American Medical Association.

"Attacks were highly correlated with emotional disturbances of a particular kind. Traumatic life situations responsible for lesions were almost exclusively those in which the patient felt resentment because

he saw himself as the victim of unjust treatment about which he could do nothing.

"In brief, these patients considered themselves wronged or injured (usually by someone in a fairly close family relationship), and they regarded the situation as one which precluded any action on their parts. They believed that they could neither retaliate nor run away. In this setting, they became intensely resentful.

"All the subjects were seen to flush when topics of significant personal concern were brought up for discussion. Five subjects had lesions while discussing their problems.

"In general, as a group the patients had not only failed to express hostility but tended not even to feel it. They had for the most part adopted a rather passive attitude toward punishment from parents or other superiors. This was sometimes the result of being exposed to authoritarian parents who tolerated no expressions of aggression.

"One man apparently came to a decision that there were more rewards in conforming to his father's wishes than in rebelling. Another was brought up by his mother and aunt to feel guilty about hostile feelings or behavior and almost all tendencies to action on his part had been frustrated by adults. In at least two women the difficulty seemed to be principally that they found hostility unacceptable in terms of their standards of proper behavior.

"The failure to find 'allergic' factors is of interest. Many of the patients had already tried eliminating from their diets various foods which they had suspected of being responsible for their diseases. However, this group may not represent a truly random sample of persons with chronic hives.

"All the evidence presented with respect to skin changes indicates that the difficulty is an increased tendency of vessels to dilatation. The vessels behave as they would have if the person actually had been receiving blows."

DOCTORS USE NEW DRUG AGAINST TOXIC GOITER

Promising results in treating patients for toxic goiter with a new synthetic drug, tapazol, are reported by two doctors from Wayne University College of Medicine, Detroit.

These findings should be considered preliminary. The drug has been used in only 18 patients and observations have covered only a six-month period, Drs. William S. Reveno and Herbert Rosenbaum say in the August 19 Journal of the American Medical Association.

Tapazol is not now generally available to doctors. Its use is limited to experimental studies.

The drug is an antithyroid compound with action 25 times as powerful as propylthiouracil, a compound commonly used in treating overactivity of the thyroid gland, according to the doctors. Abatement of symptoms occurred in patients with toxic goiter variously five, six and eight weeks after administration of tapazol was begun, according to the article. Two patients who had relapsed after treatment with propylthiouracil were relieved after 57 and 51 days of treatment with tapazol, respectively.

"In the small group of patients observed, tapazol exhibited effective antithyroid activity closely resembling that of propylthiouracil but with a potency approximately 25 times greater," the doctors say, adding:

"Toxic reactions were not encountered, but more time and treatment of a larger number of patients will be required for assessment of this highly important factor."

NEW TEST FOR STOMACH CANCER DE- VISED BY NEW YORK DOCTORS

An ingenious balloon test for cancer of the stomach has been devised by a group of doctors from Cornell University Medical College and New York Hospital, New York.

The process is reported in a recent issue of the Journal of the American Medical Association by Drs. Frederick G. Panico, George N. Papanicolaou and William A. Cooper.

A rubber balloon covered with short pieces of braided silk and attached to the end of a tube is swallowed into the patient's stomach and then inflated, the doctors say. Cells from the stomach lining cling to this balloon "brush." The apparatus is deflated and withdrawn and the cells are removed by washing in a special solution.

The cells are then examined by means of the smear test, developed by Dr. Papanicolaou and in wide use for detecting cancer of

the cervix in women. Describing the test, Dr. Papanicolaou says:

"Cells at the surface of the growth tend to be dislodged. A technique for collecting the cellular debris, smearing it upon glass slides, and staining it has been perfected so that the various components may be studied. Interpretation of the smear requires the services of a careful and discriminating cytologist who has had experience in this field."

The balloon test was used in collecting cellular material from the stomachs of 33 patients in whom the diagnosis of a disease was confirmed by surgery, the doctors report. Of this group of 33, 17 had malignant disease and 16 had diseases other than cancer.

Among the 17 patients with cancer, balloon wash smears revealed no malignant cells in two cases, suspicious cells in one case and malignant cells in 14 cases.

Among the 16 patients with conditions other than cancer, smears were negative for malignant cells in 14. Two specimens were read falsely as suggestive of malignancy.

TERRAMYCIN REPORTED EFFECTIVE AGAINST TWO TYPES OF PNEUMONIA

Results indicate that terramycin, a newer antibiotic drug derived from a mold, is remarkably effective against both pneumococcal and virus pneumonia, a group of New York doctors report in the August 12 Journal of the American Medical Association.

Terramycin proved to be valuable in treating 18 patients with pneumonia due to pneumococcus microbes and seven patients with virus pneumonia, Drs. George W. Melcher, Jr., Count D. Gibson, Jr., Harry M. Rose and Yale Kneeland, Jr. of the Columbia University College of Physicians and Surgeons and Presbyterian Hospital say.

"Results indicate that terramycin is remarkably effective in the treatment of both types of infection," the doctors point out.

The drug was administered by mouth in the form of tablets or capsules. Vomiting and nausea occurred in some patients as side effects of terramycin, but these symptoms seemed less severe than similar re-

actions observed in patients following administration of aureomycin, according to the doctors.

AUREOMYCIN SHOWS PROMISE AS TREATMENT FOR MUMPS

Results obtained in treating three patients with mumps suggest that aureomycin, an antibiotic drug, may be of definite value in this disease, according to two doctors from Sayre, Pa.

Two women treated for mumps with aureomycin showed definite improvement within 24 hours after receiving the first dose of aureomycin, Drs. Wilfred D. Langley and John Bryfogle say in a recent issue of the Journal of the American Medical Association. Aureomycin was given to both women on the second day after swelling in the glands began.

Another patient, a man, received the drug less than 24 hours after symptoms of mumps were first noticed. Forty-eight hours after treatment was begun, he showed definite improvement.

"While no definite conclusions can be drawn from treating three patients in the manner described, the results obtained would suggest that aureomycin may be of definite value in this disease," the doctors point out.

PHILADELPHIA DOCTOR APPOINTED TO AMERICAN MEDICAL ASSOCIATION POST

Dr. Francis R. Manlove of Philadelphia has been appointed Associate Secretary of the American Medical Association's Council on Medical Education and Hospitals, the A. M. A. Board of Trustees announced recently.

For the past four years Dr. Manlove has been assistant professor of medicine at Temple University School of Medicine and during the past year has been Chief of Medical Service B at Episcopal Hospital, Philadelphia. He is a diplomate of the American Board of Internal Medicine.

Dr. Manlove will work directly with Dr. Donald G. Anderson of Chicago, Secretary of the Council, on problems related to medical schools, foreign medical graduates, postgraduate education and medical licensure.

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RESPONSIBILITIES OF THE RADIOLOGIST TOWARD HIS PATIENT AND REFERRING PHYSICIAN IN DIAG- NOSTIC PROCEDURES INVOLVING THE GASTRO- INTESTINAL TRACT

PAUL C. SWENSON, M. D.

and

RUSSELL WIGH, M. D.

Philadelphia

As the title suggests, we propose to discuss briefly what we consider should be the philosophic approach to the roentgen study of the gastro-intestinal tract knowing what we do of its limitations. If a proper understanding of its purposes and limitations is had by all concerned in the examination, we, as radiologists, and our professional conferees can better advise both each other and the patient. The examination thereby becomes more valuable to all.

Almost every obscure clinical problem is ultimately examined by some radiologic method, and though each problem may not be completely solved thereby, the examination is invariably helpful, if only by the negative evidence it produces. On the other hand, every method of examination has limitations and problems peculiar to it and the radiographic examination of the gastro-intestinal tract is no exception to this. Yet, until the biochemist and/or the physiochemist have finally solved the problem of the early diagnosis and treatment of cancer, the x-ray examination remains the one means of early diagnosis of this disease when

it involves the gastro-intestinal tract. Nothing has yet replaced it, crude and inaccurate as it is in certain instances.

It follows that one of the obviously well advanced stomach growths with a large filling defect on the roentgenogram presents no problem. Neither is it of much advantage to the patient to have it discovered, for in this sort of lesion the five year follow-up after surgery has not changed in the last ten years, in spite of more temeritous and better surgery both in technique and extent. Even though the primary cancer can be removed successfully by the surgeon, metastasis has occurred rendering it surgically incurable.

The case that presents the greatest worry to all is the one where the symptom pattern and clinical judgment suggest to us that a lesion should be present, but cannot be detected because of the known limitations of the examination—thus the continual attempt to get the cases early and look for the earliest manifestations of disease through new and better techniques.

One of the greatest fallacies which has been promulgated to the laity is that the x-ray examination sees all, knows all, and tells everything, particularly as far as roentgen patterns of the gastro-intestinal tract are concerned. We must always bear in

From the Department of Radiology, Jefferson Medical College and Hospital.

Presented at the annual session of the Association, Birmingham, April 21, 1950.

mind that we are getting only a silhouette of the inside of the alimentary tube and that we are limited to the changes in this contour insofar as they are affected by alteration in the motor function and by the apparent flexibility and contour of the lumen.

It is thus obvious that there is a definite threshold below which we do not appreciate any roentgen findings. An early intramural lesion can be present which, unless it has affected the local motor function of the wall in such a way as to produce an apparent change in flexibility, cannot be appreciated even fluoroscopically. This threshold of roentgen recognition must be appreciated by the clinician, patient, and radiologist alike; otherwise a false sense of security will be established which will mislead us all.

A negative report means only that, at the time of the examination, no lesion was seen. Three to six months later, there may be obvious evidence of pathology. It is the duty of the radiologist in each case where cancer is to be ruled out completely to suggest reexamination early and make his explanation to the patient and clinician clear as to why the examination is being done. Otherwise he is shirking his responsibility. Admitting limitations of an examination is not an apology for it. Rather would we make the examination more valuable to all by recognizing that the limitations are there.

Another point that is poignant to all concerned, now that we know that early diagnosis is so important, and realizing that we cannot see histologic structure radiographically, is that we must be morally prepared to get an occasional case with a false positive interpretation in order that the early true positive case can be salvaged. By this means more and more lesions can be picked up early. An example of what I mean might be cited from a mass survey of the gastrointestinal tract in which one of us¹ had a part some years ago. Out of approximately 2500 cases there were three true cancers found. There were five cancers that had to be thrown out of the series, so to speak, because they were symptomatic (we were looking for asymptomatic cases); but there were also five cases later proved benign that

we could not distinguish from cancer and that warranted exploration on that basis alone. The surgeon could not be sure at operation. It was only after the lesions had been studied histologically that their true nature was apparent. They were ulcerating, benign lesions. Neither the patient, the referring clinician, the radiologist, nor the surgeon should feel badly in a situation like this, however, since the patients all did well postoperatively and perhaps are much better off having had removed that which is considered by many to be a "fertile bed for carcinoma."

Much discussion has been provoked recently in regard to the technique of the roentgen examination and we would like to give our impressions relative to this. There is no doubt that fluoroscopy entails the greatest amount of work and exposure in diagnostic roentgenology. There may be some hesitancy in using the method because of the added effort which is necessary on the part of the roentgenologist, and one wonders whether the great danger cited by some of us who should know protective means is not merely a matter of rationalization.

No discussion can summarily dismiss either the fluoroscopic or the roentgenographic approach to gastro-intestinal tract inspection. Since neither can be a complete substitute for the other, both must usually be employed. However, the need for fluoroscopy is the greater in determining abnormal function. Any number of films alone can never be as satisfactory unless of such a volume that the resulting series of exposures virtually amounts to a motion picture. Even then, the advantage of fluoroscopic guidance for selection of the type of films to be made would be lacking, not to mention the poor economy involved in the actual waste of film in the usual case. Furthermore, preliminary fluoroscopy settles all conjectures raised by roentgenograms as to what is apparent or real. The roentgenogram, on the other hand, does provide detail and aids in the analysis of the findings in the extremely heavy individual; it also serves as an accurate record, permits comparison with a previous examination and other cases, promotes understanding for the referring clinician, and, incidentally, is the sole means upon which to judge the work done by the physician in training. There-

1. St. John, F. B.; Swenson, P. C., and Harvey, H. D.: An Experiment in the Early Diagnosis of Gastric Carcinoma, *Ann. Surg.* 119: 225-231 (Feb.) 1944.

fore, it is obvious that both procedures are important.

The rapid acceptance of the filming roentgenoscope is also reasonable evidence of the need for both approaches. Spot film exposures and compression are invaluable for a proper film record (figs. 1, 2, 3). They



Fig. 1. a. Acute duodenal ulcer without compression.

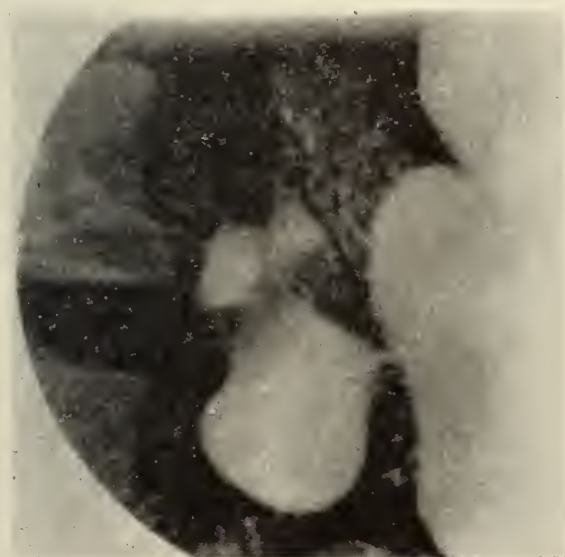


Fig. 1. b. Compression roentgenogram demonstrating a crater.

bring out mucosal relief, crater shadows, and magnify small filling defects which otherwise might be concealed by the mass of the opaque mixture. The compression cone also permits one to displace from the area,



Fig. 2. Polypoid mass in sigmoid demonstrated by compression.



Fig. 3. Constricting lesion (lymphosarcoma) demonstrated in the small bowel at point of arrest of a Miller-Abbott tube. Compression aids in displacing superimposed loops and in bringing out better detail.

under scrutiny, superimposed loops of bowel. Bear in mind, however, that all of these special procedures are done because there is suspicion or well-defined evidence of a lesion seen fluoroscopically.

We think the referring clinician and patient should always be aware of the fact and have it constantly emphasized to them that the number and type of films are not the

important factor in the examination. It is certainly not the point that should determine the radiologist's fee. Any attempt to place a fee on a per film basis is an injustice to all. As far as we are concerned, films are made on our patients only as the fluoroscopic evidence may suggest, and the clinician should be prepared to accept the radiologist's word as to this once he has been convinced of his integrity.

We get a great satisfaction out of displaying but a single small film with four spot pressure exposures on it to demonstrate a crater in the duodenal bulb. The accompanying fee for a diagnosis well made is equally as large as it would be had we felt it necessary to take thirty films in a more intricate case. The implication as to what the patient pays for is quite obvious. That abstract thing called "a good opinion" is after all the most important feature of the whole examination.

We have already referred to the importance of early diagnosis of lesions in the stomach, but may we say, further, that the diagnosis of all early lesions, regardless of their position in the gastro-intestinal tract, will not only depend upon the capabilities of the examiner and the comprehensiveness of the study but on the presence of a high degree of suspicion on the part of both the referring clinician and the radiologist.

The problem of establishing or excluding the presence of neoplasm will become greater as more and more gastro-intestinal mass surveys are done on asymptomatic patients. Recently we have been doing photofluorographic studies of the stomach and duodenum using the Schmidt Camera set-up.*² The examinees must be over forty years of age and free of upper alimentary tract complaints. They are referred from the various Cancer Detection Clinics of Philadelphia and from our own Outpatient Department.

After the initial screening, all persons with any apparent variations from the normal are reexamined by the conventional

method. At this writing, we have examined about 1700 people by this method. We have found three cancers, four benign tumors, and four questionable gastric antral lesions which are being followed.

A mass survey involving any portion of the body always brings up the question of when to reexamine in order to insure the absence of roentgen findings, realizing that at the time of the first examination a lesion might have been below the threshold of recognition radiographically. Unfortunately, no one knows the latent period in the roentgen diagnosis of cancer of the stomach. Indeed it may vary with the cell type and location, as well as other factors in the individual case. Rigler³ has called attention to this latent period in chest lesions and speaks of what might be called the true latent period and the period after the onset of symptoms. These vary considerably with various diseases, but particularly with carcinoma of the stomach. It is therefore difficult to advise such patients as to the period when reexamination should take place, unless our entire study will eventually help determine this. We hope to reexamine the same group at intervals for this purpose. As a matter of fact, we won't know whether the mass surveys are of any value at all until the several institutions which are now doing this study have completed about ten thousand cases each.

Persistence on the part of both referring clinician and radiologist is very important in uncovering small lesions. Just as important are pertinent notes on the history, either received with or obtained from the patient, which will help focus attention to a specific organ. This is especially true of the esophagus which many of us study routinely only in the erect position. For instance, a 62-year old colored man was examined in whom the primary complaint, as submitted, was epigastric pain, and the presumptive diagnosis, gastric ulcer. No abnormality was noticed. The patient continued to have distress and was referred back with the primary complaint of *dysphagia*. On this study nothing unusual could be seen in the esophagus in the erect examination, but further observation in supine and prone

*This investigation is supported in part by a research grant from the National Cancer Institute of the National Institutes of Health, U. S. Public Health Service.

2. Roach, J. F.; Sloan, R. D., and Morgan, R. H.: The Detection of Gastric Carcinoma by Photofluorographic Methods, *Am. J. Roentgenol. & Rad. Therapy* 61: 188-194 (Feb.) 1949.

3. Rigler, Leo G.: Roentgen Examination of the Chest, *J. A. M. A.* 142: 773-777 (Mar.) 1950.

positions demonstrated one of the smallest ulcerated neoplasms we have in our files (fig. 4). The surgical specimen contained



Fig. 4. a. and b. Distended and non-distended esophageal lumen respectively; ulcerating carcinoma.

a shallow, malignant ulcer only 0.3 cm. wide, although 2.5 cm. long.

Esophageal varices and those around the cardia of the stomach very often escape detection since we are usually called upon to examine the patients after they have bled. In this case they very often will be collapsed. If there has been no bleeding one very often encounters varices of such relatively small size that peristalsis can actually "milk out" the blood so that there would be no displacement defect formed. Fluoroscopic examination is very important in order to get the optimum amount of barium in the lumen since varices can very easily be covered up by too much barium. The Valsalva test may help bring out the smooth defects. The point that we wish to stress is that one cannot use the x-ray as a means of ruling out varices.

We feel that the radiologist should not be held responsible for lesions in the rectum as long as the clinician can feel and look at this part by direct inspection. There may be an occasional case, however, when the x-ray examination can be used to determine the extent of the lesion; and, although we regard the rectum as not strictly within our province, there is no reason why we should completely neglect it. Small masses may not be too well appreciated by digital examination and not everyone is trained in proctosigmoidoscopic study. It has been found profitable in barium enema studies to oc-

clude the enema tube partially so that initially only very small quantities of the opaque mixture are permitted to flow into the rectum; the organ can then be studied in a partially collapsed state. Also, on post-evacuation roentgenograms, its mucosal pattern can be clearly seen and small masses are easily identified with double contrast enemas (fig. 5).



Fig. 5. Polypoid lesion shown in air-filled rectum.

A 74-year old white man was admitted because of constipation and bloody stools. Two years previously he had had an extensive resection, followed by secondary closure for an adenocarcinoma of the sigmoid. The physical examination of the rectum was negative during the current hospitalization and thus it was believed that the carcinoma had recurred. The barium enema examination demonstrated a rectal polypoid mass. This was confirmed by proctoscopy. Histopathologically it was a benign adenoma; it measured 1.0 x 0.5 cm.

In large clinics, almost daily, one encounters abnormal findings in the small bowel; many of these are manifestations of disease predominantly extra-alimentary. There seems to be no differential point as far as appearance is concerned which permits identification of any one of the illnesses producing findings usually described as a deficiency or irritation pattern. Certainly, in the youthful age group, the functional changes that are noted are more frequently an allergic response or food sensitivity to the ingestion of an allergen or sensitizing food than to a deficiency state. The bowel changes commonly thought of as a deficiency pattern can also be produced by metastases to the mesentery or by angioneu-

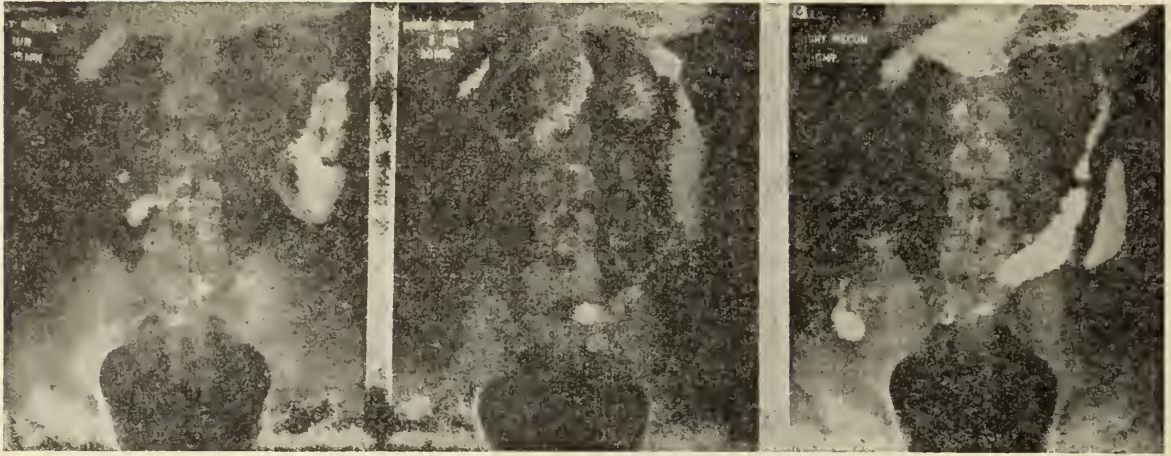


Fig. 6. a, b, and c. Showing definite disturbance in motility and pattern of the small bowel during an attack of angioneurotic edema.

rotic edema (fig. 6), which further emphasizes its non-specific nature. This case is that of an 18-year old medical student who had bowel symptoms coincident with peripheral angioneurotic edema at the time he showed these x-ray findings. They cleared up completely with subsidence of the peripheral manifestations and the abdominal symptoms. The bowel pattern restituted completely to normal.

The radiologist must be ready to recognize these subtle changes and be ready to suggest their non-specific, yet perhaps very significant nature. The clinician in turn must be ready to correlate the evidence with the clinical findings if possible, or discard it with equal confidence if the evidence does not fit.

Although roentgenologists are familiar with the abnormalities of pharyngeal action in disorders of central origin, we have paid little attention to small bowel changes as related to diseases of the central nervous system. That a pronounced effect may be produced is illustrated by figure 7 which demonstrates a very slow transit of the opaque meal four hours after its ingestion and also moderate distention of the small bowel. This was found in a 67-year old white man who subsequently proved to have an intradural neurofibroma of the left twelfth thoracic nerve.

Possibly nothing poses a greater problem than that of the patient who has bled either copiously or in small amounts on repeated occasions and in whom a definite source can-



Fig. 7. Irregularity of small bowel pattern and disturbance in motility in a patient with a neurofibroma of the 12th thoracic nerve compressing the spinal cord.

not be found by roentgen examination. Frequently the history of the patient suggests that a peptic ulcer may be present. Since the possible sources of hemorrhage are numerous, the roentgenoscopist must not be hasty in concluding that what are actually equivocal findings do represent ulceration. A report suggesting doubt on his part is

preferable, because dogmatic statements may preclude or delay other possible avenues of investigation.

However, since the usual major source of bleeding is from a peptic ulcer, all efforts should be directed toward establishing whether such a lesion exists. Since it is more the rule than the exception that one fails to find the crater after hemorrhage has ceased, it seems preferable to examine the patient even though he is actively bleeding.

We recommend and urge this since there can be no harm as long as forceful palpation is not used and the patient is handled carefully. Obviously the patient should first be treated for any acute shock of massive blood loss, but thereafter slight continued oozing is no contraindication to x-ray examination. Indeed barium suspension may actually act as a hemostatic. Acute peptic ulcers which have stopped bleeding may be concealed by the very clots formed within them. When this happens everyone is then in doubt; the



Fig. 8. b. Complete obstruction at gastro-enterostomy site two years after partial gastric resection. See text.

exact diagnosis is not established and valuable time may be lost in searching elsewhere for a point of bleeding.

A 48-year old white man was admitted with melena and hematemesis but with few symptoms suggesting peptic ulcer. Life was sustained only with numerous transfusions. When he had stopped bleeding, a barium meal examination showed only suggestive evidence of a lesion in the distal portion of the bulb. No actual crater was seen (fig. 8). The implication was that the source of the hemorrhage was from a duodenal ulcer. After three comparable episodes of bleeding, a partial gastric resection was done. The surgical specimen contained no ulcer. However, since he remained well for two years, it was thought that inversion of the duodenal stump had tamponaded a postbulbar or distal bulbar ulcer. Two years later he was admitted with signs of obstruction at the gastro-enterostomy stoma, at which time operation showed a carcinoma to be ob-



Fig. 8. a. Possible lesion in distal portion of duodenal bulb.

structing the anastomosis. No carcinoma had been demonstrated in the original specimen on serial sections of the stomach and the assumption is that the carcinoma was an entirely new and unrelated process.

Although it is quite possible that bleeding can occur from varices forming in a gastric hiatal hernia, it is not unusual to be able to demonstrate an ulcer actually within the hernia or in the esophagus just proximal to the esophagogastric junction. Because of the superficial character of such ulcers and the inability to use compression, the assumption must be that we are missing many of them. Figure 9 demonstrates such an ulcer which



Fig. 9. Ulcer in distal portion of short esophagus just proximal to a gastric hernia.

was described as very superficial by the endoscopist. It is at the distal portion of a short esophagus in close proximity to the hiatal hernia. We should all bear in mind that absence of the roentgen evidence does not rule out ulcer.

There is the possibility that some of us pay too much attention to the bulbar portion of the duodenum and too little to its remainder, at least during roentgenoscopy. The number of patients having disease of the duodenal loop producing bleeding is not too small.

Figure 10 is an example of a postbulbar ulcer with the typical incisura opposite it, found in a 43-year old white man whose

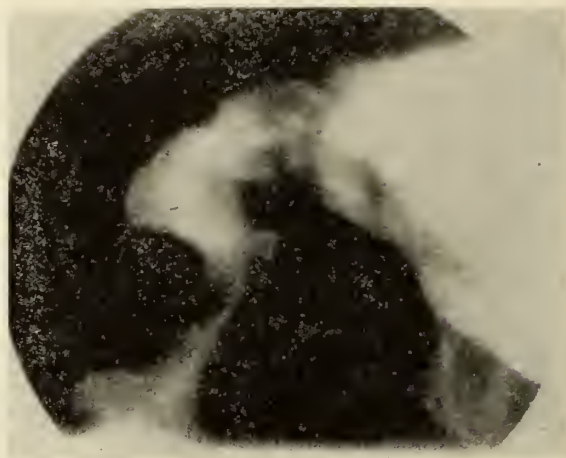


Fig. 10. Postbulbar duodenal ulcer with a large incisura along the opposite curvature.

chief complaint was interscapular pain for four years. This had been relieved by milk and alkali therapy but no definite diagnosis had been established. He had had hematemesis six months previously and melena three days before this examination.

Two other unusual sources of hemorrhage below the stomach and duodenal bulb follow.

A 12-year old white boy was admitted with the complaints of abdominal pain and vomiting, and the passage of tarry stools. He had had episodes of pain and vomiting since



Fig. 11. Mass lesion in duodenum distorting mucous membrane pattern (enterogenous cyst).

the first year of life. Two weeks before admission the attacks occurred several times daily, and for the two days prior to admission, the mother noticed that the stools were tarry. The hemoglobin and red blood cell levels were low. Stool examinations revealed strongly positive benzidine reactions. Figure 11 demonstrates a mass lesion in the descending duodenum, and surgical and pathologic examinations established it to be an intramural enterogenous cyst.

A 69-year old white woman was admitted for epigastric pain of two months duration. Hematemesis had occurred the day of admission. The stools were positive for occult blood. The red blood cell and hemoglobin levels were very low. Figure 12 demon-



Fig. 12. Mass lesion in duodenum (leiomyoma).
strates the presence of a mass lesion in the second part of the duodenum. Histopathologic examination indicated it to be a leiomyoma.

Once the upper gastro-intestinal tract has been ruled out as the site of bleeding, we are morally obligated to search the small bowel thoroughly with serial films and fluoroscopy, including every inch of its lumen. There can be no short cut in this respect if we are to give the patient the right care. The colon must also be examined for any bleeding point, including a double contrast study if there is a suspicious finding, by the usual methods. Polypoid tumors can be brought out beautifully by this procedure but repeated studies must be done if findings suspicious of a lesion are shown before sur-

gery is done.⁴ No effort is too great for the demonstration of the small subtle lesion, for we are obligated to show the surgeon its exact location and as much about its nature as possible.

Another source of bleeding which deserves consideration is the diverticulum either single or multiple.

A 52-year old colored woman was admitted with the primary complaints of weakness, lack of appetite, hematemesis, melena and left upper quadrant pain. Gastric hyperacidity was present; the hemoglobin and red blood cell levels were very low; blood was consistently found in the stools. Esophagoscopy, gastroscopy and sigmoidoscopy failed to reveal a possible bleeding point. Figure 13 demonstrates a duodenal diver-

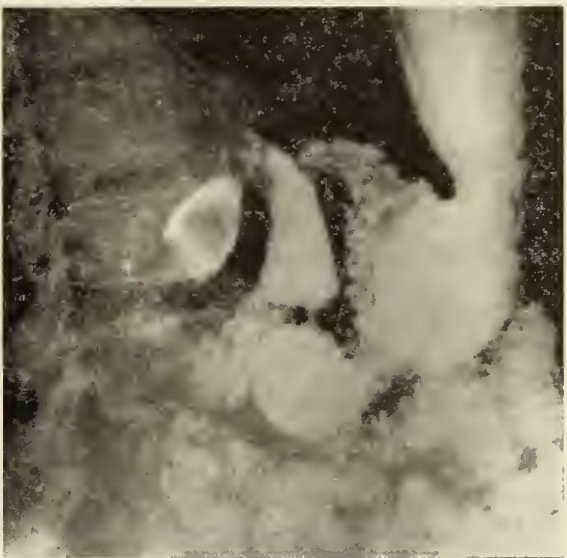


Fig. 13. a. Duodenal diverticulum with central radiotranslucency (food, edema, blood clot?).
ticulum which apparently contains some food remnants. Subsequent small bowel enemas and colon enemas did not demonstrate any other major abnormality. On a final upper gastro-intestinal study it was noted that the duodenal diverticulum could not be completely filled. Roentgenograms demonstrated some radiating folds in the diverticulum with a small fleck of barium in the center of these folds. This evidence was not accepted as sufficient for surgery and the patient left the hospital. Shortly

4. Swenson, P. C., and Wigh, R.: The Role of the Roentgenologist in the Diagnosis of Polypoid Disease of the Colon, *Am. J. Roentgenol. & Rad. Therapy* 59: 108-121 (Jan.) 1948.

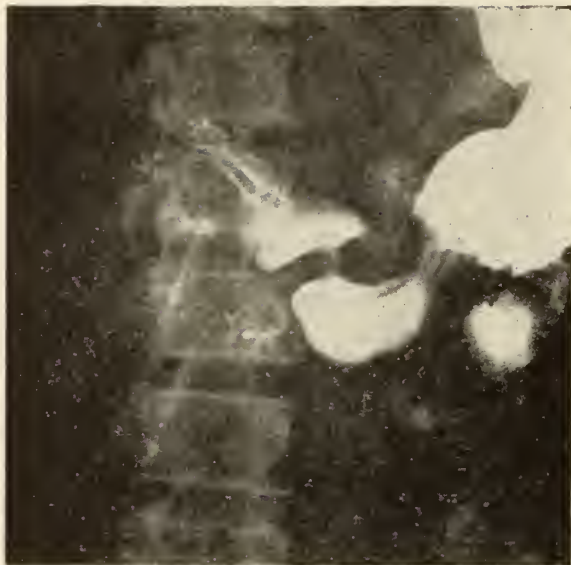


Fig. 13. b. Subsequent study demonstrates the diverticulum to fill poorly and shows radiating folds and a small ulcer within it.

thereafter she was admitted to another institution for severe gastro-intestinal hemorrhage from which she died. The postmortem description indicated that the peritoneal cavity was filled with blood, its source being from a perforated diverticulum of the descending duodenum. Apparently the diverticulum contained a blood clot during the first examination.

One can never be certain when simple diverticulosis is the cause of melena. The following case at least indicates that it must be considered in the differential diagnosis, although probably as a diagnosis it should be arrived at only by exclusion. A 56-year old white man was admitted because of the passage of a watery bright red stool the previous day (fig. 14). Five days previously he had noted intermittent sharp pain in the right flank. There had been several episodes of melena during the past ten years and, since they had been accompanied by epigastric symptoms, the clinical diagnosis had been peptic ulcer. The patient expired before being transferred to the operating room for subtotal gastrectomy for what was considered to be a bleeding peptic ulcer. At postmortem there was no evidence of a peptic ulcer. The only positive finding was the presence of numerous diverticula of the colon previously established by roentgen study. The colon was filled with blood but there was no blood in the small bowel.



Fig. 14. a. and b. Barium enema and barium meal respectively demonstrating diverticula without diverticulitis as sole possible source of massive hemorrhage.



SUMMARY

In summary we hope we have served to emphasize the limitations of the roentgen examination of the gastro-intestinal tract and the need for constant disciplining of ourselves to think straight in our use and interpretation of this modality.

MENINGOENCEPHALITIS DUE TO VIRUS OF HERPES SIMPLEX

REPORT OF CASE

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and

JOHN M. AKIN, M. D.

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HISTORY

The patient, a thirty-six year old white female, was admitted to Jefferson Hospital on November 29, 1947 complaining of headache. At 3 A. M. November 27, 1947, she was awakened by generalized headache but was able to go back to sleep. The next morning on the way to Panama City, Florida, by automobile she noted moderate headache associated with nausea and some vomiting. The severity of the headache gradually increased.

On arrival at Panama City, she immediately went to bed and slept so deeply for three hours that her companions were alarmed and took her to a hospital in that city where she was admitted. Two lumbar punctures were done, the first showing 80 cells (mostly lymphocytes), and the second on the following day revealed 76 cells, of which 92 per cent were lymphocytes. The patient was given penicillin, and in the afternoon of November 29, 1947 was transported to Birmingham, Alabama, by ambulance plane. During the trip she complained of some pain in the left ear and left temporal region.

One year before admission she had otitis media on the left but apparently recovered uneventfully. There was no history of contact with sick animals or with horses immediately prior to the present illness.

EXAMINATION

The patient was a well developed, well nourished white female appearing drowsy and complaining of a moderately severe headache. Her temperature was 102, pulse 110, respiration 25, and blood pressure 148/-80. She was anxious but was correctly oriented. Examination of the heart and lungs and abdomen revealed no abnormality. The left tympanic membrane ap-

peared somewhat dull. The general physical examination was otherwise normal.

On forward bending and rotation of the head there was some pain in the neck but no real rigidity. Brudzinski and Kernig signs were negative. Olfactory acuity was slightly reduced on the right. Slight drooping of the right corner of the mouth on volitional movement was noted. The cranial nerves were otherwise normal. Superficial, deep and combined sensations were normal. There was slight increase in muscle tenderness in the calves bilaterally. Muscle tone and coordination were normal and there was no sign of cerebellar dysfunction. All tendon reflexes were hyperactive. A definite suggestion of a Babinski sign was present on the left. The upper abdominal reflexes were absent. Otherwise the neurologic examination was normal.

LABORATORY STUDIES

Hematology on admission was normal except for a hemoglobin of 71 per cent and an erythrocyte count of 3,360,000. At no time during her stay was a leucocytosis noted. On admission, urinalysis showed a 2 plus sugar and a 2 plus acetone but subsequent urinalyses were within normal limits. Bleeding and clotting times were normal. Examination of the cerebrospinal fluid obtained showed the following results:

November 29, 1947:

41,079 RBC per mm.; 48 WBC (4% polys., 96% lymphs.); total protein 41 mg. %; sugar 50 mg. %; chloride 730 mg. %. Wassermann negative, culture negative. Initial pressure 250. Ayala index 10.2. The fluid was collected in serial tubes and showed a uniform number of cells.

December 6, 1947:

No RBC, 290 WBC (100% lymphocytes); initial pressure 130 mm. of water.

COURSE

A total of 3,050,000 units of penicillin was administered intramuscularly. Intravenous infusions of glucose were given as needed.

Sodium phenobarbital and mesantoin were started on December 7, 1947.

On November 30th, the day after admission, there was some increase in headache and vomiting increased but the temperature had fallen to 100.4 and pulse and respiration were normal. On December 1st her condition seemed somewhat improved and she complained less of headache and did not vomit, but that night her temperature rose to 102.8, and a moderately severe mixed receptive and expressive aphasia with perseveration was noted. The tendon reflexes were then slightly increased on the right and the rigidity of the neck was more marked. No visual field defect or papilledema was found. There were marked elements of apraxia mixed with the aphasia. Although she kept the left eye closed a good deal, she denied diplopia and there were no extraocular muscle pareses. By December 3rd the aphasia had improved slightly, the temperature was lower, the neck less stiff, and her blood pressure had returned to normal levels. She began to show increasing drowsiness which became so severe that by December 6th she could not be aroused. On this day her temperature began to rise again, the aphasia became worse, and meningeal signs were more pronounced. On December 7th a convulsive seizure occurred which began with turning of the head to the right and twitching of the right side of the face. From this time on her condition deteriorated rapidly and by December 8th she was comatose and showed widely dilated pupils and bilateral Babinski signs. Her blood pressure had risen to 210/80. She became cyanotic and stopped breathing and in spite of artificial respiration she died, the heart continuing to beat for eight minutes after respiration had ceased.

AUTOPSY FINDINGS¹

The cut surface of the lung showed a minimal amount of congestion. The spleen was slightly enlarged but was normal to microscopic examination. A small endometrial polyp was present. The other abnormal findings were limited to the nervous system.

The brain was fixed in 10 per cent formalin. Gross examination revealed no abnor-

malities except for slight softness of the anterior portion of the left temporal lobe.

Histologic examination of the brain, using hematoxylin and eosin stain, revealed slight infiltration of the leptomeninges with lymphocytes. In a few areas (fig. 1) the infil-

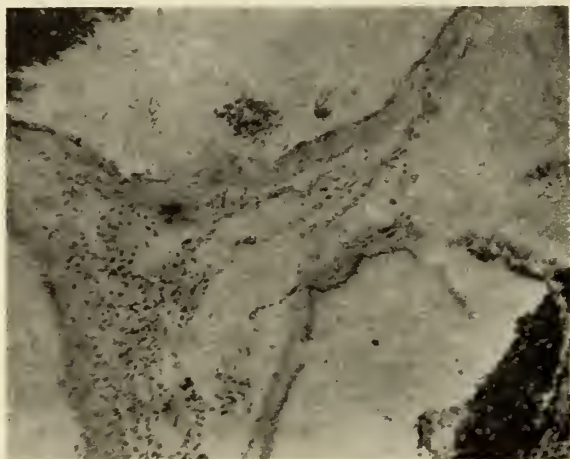


Fig. 1

tration was more pronounced and erythrocytes were sometimes mixed with the lymphocytes. The cerebral cortex showed mild degenerative changes with disturbed polarity of some ganglion cells, and pericellular edema was noted in layer 3. The subcortical white matter showed evidence of slight demyelination. In sections through the lateral ventricles the ependyma was normal but a few blood vessels showed slight perivascular lymphocytic infiltration.

In sections of the mesencephalon, at the level of the inferior colliculus, extensive infiltration of the Virchow-Robin perivascular spaces with lymphocytes was seen (fig. 2).



Fig. 2

1. Courtesy of H. G. Davis, M. D., Department of Pathology, Medical College of Alabama. Special studies in neuropathology are in progress and will be reported separately.

Evidence of demyelination was present (sometimes perivascular) and some areas of complete destruction were noted (fig. 3).

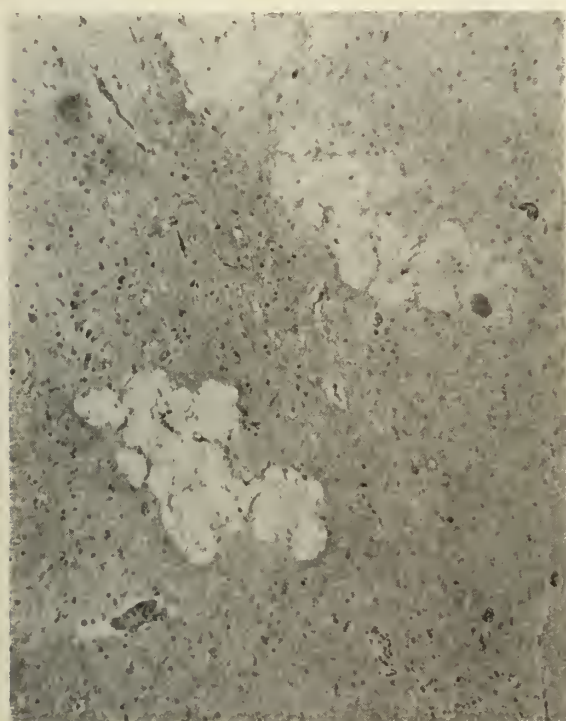


Fig. 3

Sections through the lower medulla showed some demyelination and perivascular edema but no perivascular lymphocytic infiltration was present. There were no inclusion bodies noted in hematoxylin and eosin preparations. Neuronophagia was slight or absent. No changes in the motor neurones were noted which would suggest acute polioencephalitis.

VIRUS STUDIES:

A section of the brain was preserved in sterile glycerine and from this specimen a virus has been isolated. The virus is lethal for white mice, hamsters, rabbits and cotton rats by intracerebral inoculation but not for monkeys and guinea pigs. Monkeys and guinea pigs develop neutralizing antibodies for the virus after intracerebral inoculation. By appropriate techniques it has been demonstrated that the virus is not that of eastern

or western equine encephalomyelitis, St. Louis encephalitis, lymphocytic choriomeningitis, Lansing poliomyelitis, MM poliomyelitis, Venezuela encephalitis or West Nile encephalitis. By appropriate techniques it was identified as the virus of herpes simplex. The virus is not easily filterable.

In experimental animals the histopathologic picture has been mainly that of a meningoencephalitis, the reaction often being best seen in the region of the choroid plexus. Inclusion bodies were found in experimental animals.

COMMENT

No history of a "fever blister" was obtained in this patient. Within the last two years the authors have observed about ten patients with a clinical picture similar to that herein described. Several of these patients also had small subarachnoid hemorrhages in the course of their illness, but otherwise the picture was that of a virus type meningoencephalitis. It certainly seems within the realm of possibility that these might have been other instances of meningoencephalitis due to the virus of herpes simplex and that mild subarachnoid hemorrhage may be frequent in this variety of meningoencephalitis.

Rheumatoid Arthritis—We cannot underestimate the contribution which physical therapy has made to the care of the rheumatoid arthritic. It should here be emphasized that there are many simple procedures of known effectiveness which can be carried out by patients at home. These include the use of contrast baths to the hands and feet once or twice daily, and the use of a luminous baker which will provide effective heat over large surfaces. Gentle massage and motion should follow these measures. Physical therapeutic measures are designed not only to increase the blood supply to the affected joints and relieve pain but likewise to increase the range of motion in affected joints, prevent ankylosing deformities and preserve muscle strength which is necessary as soon as active motion can be resumed. Many of our larger hospitals are also instituting programs of occupational therapy which are particularly helpful for the rheumatoid patient, either in the hospital or later at home. Another simple measure which is often helpful and should not be neglected when there is involvement of the metatarsophalangeal joints of the feet is the insistence upon low heeled shoes which give good support and are wide in the toe.—*McMahon, New Orleans M. & S. J., September '50.*

2. The isolation of this virus was performed at the U. S. Public Health Virus Laboratory, Montgomery 5, Alabama, by B. F. Howitt, Bacteriologist, R. E. Kissling, Animal Pathologist, and R. H. Gorrie, Bacteriologist. A complete report of these studies is in active preparation.

SURGICAL MANAGEMENT OF PANCREATITIS

CLAUDE C. BLACKWELL, M. D.

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The increasing recognition of acute pancreatitis as one of the more important diseases to be considered in evaluating an acute abdominal disorder represents a significant advance in surgery today. Of equal importance is the growing realization that chronic pancreatitis is often responsible for recurring abdominal symptoms which in the past have been ascribed to various other pathologic states.

Balser in 1882 accurately reported the opaque areas of fat necrosis so characteristic of acute hemorrhagic pancreatitis. In 1889, Reginald Fitz of Boston, by his classical description, first established acute pancreatitis as a clinical entity. Subsequently only a few cases were accurately diagnosed prior to operation or postmortem examination. This difficulty in distinguishing pancreatitis in its acute form from several other serious abdominal disorders with which it has been confused was largely overcome by introduction of the serum amylase test. By virtue of this notable achievement, the patient critically ill with pancreatitis, who formerly was often rushed to the operating room for fear that possibly a strangulation ileus or a perforated peptic ulcer existed, now has his surgery indefinitely deferred.¹

Throughout the years various terms have been applied to describe the disorder known as pancreatitis. Today both acute and chronic forms are recognized. There is general agreement that acute edematous (interstitial) pancreatitis and acute pancreatic necrosis (acute hemorrhagic pancreatitis), although presenting different clinical pictures, are actually varying stages of the same pathologic process. Chronic pancrea-

titis occurs relatively often as a sequel of the acute form. Of late, the work of Comfort, Gambill, and Baggenstoss^{2, 3} has focused attention on the specific entity known as chronic relapsing pancreatitis.

ETIOLOGY AND PATHOLOGY

The literature is replete with extensive discussions referable to the etiology of acute pancreatitis. Following considerable research by many investigators in this field, various causes have been advocated. It is not within the province of this paper to present all of the diverging, and at times confusing, opinions held but rather to summarize briefly several of the prevailing views.

Few investigators have been impressed with the idea of an infectious origin. Most observers consider this point of view untenable although it is agreed that certain infectious diseases, such as scarlet fever, typhoid fever, and infectious parotitis, may produce a mild form of pancreatitis.⁴

By virtue of its protected position in the retroperitoneal space, only infrequently is the pancreas subjected to external violence. Rare indeed is the production of pancreatitis by trauma on the anterior abdominal wall. When injury does occur, it is usually from a penetrating wound. Traumatic pancreatitis often is followed by a collection of fluid in the lesser sac with subsequent formation of a pseudocyst.⁵

In 1901 Halsted⁶ cited the case of a patient who died twenty-three hours following operation for acute hemorrhagic pancreatitis. In

3. Comfort, M. W.; Gambill, E. E., and Baggenstoss, A. H.: Chronic Relapsing Pancreatitis. A Study of 29 Cases without Associated Disease of the Biliary or Gastro-Intestinal Tract, *Gastroenterol.* 6: 376-408 (May) 1946.

4. Dozzi, D. L., and Bockus, H. L.: Acute Pancreatitis, Pancreatic Injuries and Pancreatic Fistula. *Gastroenterology*, Vol. III, p. 769-791. Edited by Bockus, H. L. Philadelphia: W. B. Saunders Co., 1946.

5. Howard, J. M.: Surgical Physiology of Pancreatitis, *S. Clin. North America* 29: 1789-1800 (Dec.) 1949.

6. Halsted, W. S.: Retrojection of Bile into the Pancreas, A Cause of Acute Hemorrhagic Pancreatitis, *Bull. Johns Hopkins Hosp.*, 12: 179-182, April-May-June, 1901.

From the Department of General Surgery, Seale Harris Clinic.

1. Whipple, A. O.: Diseases of the Pancreas. A Textbook of Medicine, ed. 7, p. 891-900. Edited by Cecil, R. L. Philadelphia: W. B. Saunders Co., 1947.

2. Comfort, M. W.; Gambill, E. E., and Baggenstoss, A. H.: Chronic Relapsing Pancreatitis. A Study of 29 Cases without Associated Disease of the Biliary or Gastro-Intestinal Tract, *Gastroenterol.* 6: 239-285 (April) 1946.

this case Opie,⁷ at autopsy, found a 3 mm. stone impacted in the duodenal outlet of the ampulla of Vater, and by exerting pressure on the gallbladder was able to force bile into the duct of Wirsung; thus initiating the "common channel" theory. The fairly frequent association of gallbladder disease with pancreatitis adds credence to this belief.⁸ Considerable work has been expended to prove or disprove this concept of a common passageway but no universal agreement has been reached.^{9, 10, 11} As a result of investigations performed at autopsy, in clinical cholangiographic studies, and in research entailing the recovery of pancreatic enzymes from common duct and gallbladder bile, it has been postulated that reflux of bile into the main pancreatic duct is possible in a percentage of patients varying from 3.5 per cent to 89 per cent. Objections to this concept have been raised principally in view of two points: first, in certain postmortem examinations performed upon patients succumbing to acute pancreatitis, careful dissection has failed to reveal that a common channel existed; and, secondly, fairly often during cholangiographic examination, reflux of dye from the common bile duct into the pancreatic duct has been demonstrated. However, the great majority of these patients have not developed acute pancreatitis.

It has been pointed out by other investigators that all stages of acute pancreatitis may be produced in the experimental animal by ligating the pancreatic ducts and then stimulating the pancreas. Lium and Maddock,¹² as a result of a very interesting series of experiments, produced acute pancreatic inflammation and fat necrosis in the cat's pan-

creas by several means of stimulation after ligation of the ducts had been performed. In this connection it is well known that secretin, which is elaborated in the duodenum as a result of the action of the acid chyle from the stomach on the duodenal mucosa, produces an abundant watery pancreatic secretion which contains a relatively low concentration of enzymes. In contradistinction to this hormonal stimulation by secretin, the other mode of pancreatic stimulation, namely that via the vagus, evokes a viscid, enzyme-rich secretion. It is believed that perhaps during the early period of ingestion, by means of vagal stimulation, there is elaborated into the duct system of the pancreas this thick, concentrated enzyme mixture. Subsequently, at a later stage of digestion, the watery secretion from the pancreas, produced by hormonal stimulation, "flushes out" the pancreatic ducts.

As a result of these experiments, it was found that prerequisites for pancreatitis are: first, obstruction of the ducts, and secondly, some form of stimulation of the pancreas. The latter was accomplished either by the use of various parasympathomimetic drugs, such as acetyl choline, pilocarpine, and eserine, or by injection of secretin intravenously, or, most effectively, by feeding the animal. As mentioned heretofore, all degrees of pancreatitis were produced, the most extensive occurring when the ducts were ligated at the height of digestion.

Multiple are the causes advanced for obstruction of the duct system. Edema and spasm of the sphincter of Oddi definitely can produce obstruction. Edema of the duodenal mucosa, often precipitated by overindulgence in alcoholic beverages, may serve to close the tiny papilla. Alcohol is a stimulant, both of the pancreatic and gastric secretions, and obstruction of the pancreatic duct orifice at this time will often lead to acute pancreatitis. Doubilet and Mulholland¹³ found that an emotional disturbance produced spasm of the sphincter of Oddi in a high percentage of their cases. In this same type of patient, pylorospasm and cardiospasm occurred. Spasm of the sphincter of Oddi can be produced by the systemic re-

7. Opie, E. L.: The Etiology of Acute Hemorrhagic Pancreatitis, *Bull. Johns Hopkins Hosp.*, 12: 182-188, April-May-June, 1901.

8. Opie, E. L.: The Relation of Cholelithiasis to Diseases of the Pancreas and to Fat Necrosis, *Am. J. Med. Sc.*, 121: 27-43 (Jan.) 1901.

9. Morton, J.: Acute Pancreatitis, *Surgery*, 17: 475-491 (April) 1945.

10. MacGuire, C. J., and Conte, A. J.: Acute Pancreatitis, *Ann. Surg.* 127: 557-563 (March) 1948.

11. Lichtenstein, M. E., and Sullens, W. E.: Acute Pancreatitis at Cook County Hospital, *Quart. Bull., Northwestern Univ. M. School* 23: 311-317, Fall, 1949.

12. Lium, R., and Maddock, S.: Etiology of Acute Pancreatitis, *Surgery* 24: 593-604 (Oct.) 1948.

13. Doubilet, H., and Mulholland, J. H.: Recurrent Acute Pancreatitis: Observations on Etiology and Surgical Treatment, *Ann. Surg.* 128: 609-638 (Oct.) 1948.

action of drugs and by irritation of the visceral sympathetic plexus. Opium derivatives, such as morphine, will consistently cause spasm; hence this agent should never be used in treating an attack. Hydrochloric acid applied locally produces spasm. Interestingly enough, Elman¹⁴ has been able, by the use of glyceryl trinitrate placed under the tongue in the early stage of acute pancreatitis, to abort the attack. This action is due to relief of spasm of both the sphincter of Oddi and the wall of the pancreatic duct.

A tumor of the head of the pancreas, the ampulla of Vater, or the lower segment of the common duct may obstruct the main pancreatic channel. Other possible causes of obstruction are impacted gallstones, duodenal diverticula arising in proximity to the sphincter of Oddi, and stricture.

Rich and Duff¹⁵ found metaplasia of the duct epithelium with associated dilatation of the acini in thirteen of twenty-four cases of proved acute hemorrhagic pancreatitis. This type of duct obstruction producing rupture of the acini with escape of secretion plays an important role in the pathogenesis of many cases of acute hemorrhagic pancreatitis. It should be borne in mind that these authors do not exclude other possible modes of obstruction.

Regardless of other factors involved, most observers agree that the *modus operandi* consists in the activation of trypsinogen with subsequent conversion into the proteolytic active enzyme trypsin. This accounts for the auto-digestion of the pancreas. Bile itself is not necessary for the activation of trypsinogen since there are innumerable other agents which may activate this proenzyme; such as tissue extracts, calcium salts, hydrochloric acid, bacteria and other substances. As a result of obstruction, the increased intraductal pressure—in an actively secreting or stimulated pancreatic gland—causes rupture of the ducts coursing along the interlobular septa. The usual inflammatory reaction occurs with edema and vascular engorgement as prominent features.

As a result of continuing progressive edema and exudation, distention of the capsule of the pancreas and irritation of the posterior peritoneal wall is produced with resultant pain, mediated by the splanchnic nerves. Increasing edema promotes ischemia, which in turn is followed by pancreatic necrosis.¹⁶ As the necrosis progresses, the exudation changes from clear to blood-tinged. If the obstruction is severe and unrelieved, vessel necrosis with hemorrhage occurs. Thus it is seen that the pathologic state is dependent upon the concentration and activation of the proteolytic and lipolytic ferments in the escaping juice. This in turn is related to the degree and duration of obstruction.

The pathologic findings vary from segmental edema to diffuse involvement of the entire pancreas. There may be patchy or wide-spread necrosis. The location of the ductal rupture readily explains the patchy distribution. Fat necrosis¹⁷ may occur in acute edematous pancreatitis as well as in acute pancreatic necrosis. In addition, where hemorrhage and necrosis have occurred in the gland, a sanguineous fluid is often found in the omental bursa, and at times in the peritoneal cavity itself. Frequently a merging of the various stages of acute pancreatitis occurs, and if the hemorrhagic type is present, bacterial invasion of the ischemic pancreas may produce actual suppuration with subsequent abscess formation.

Peritoneal fluid when present contains a high concentration of protein as well as the three pancreatic enzymes—trypsin, lipase, and amylase. The extent of fat necrosis which occurs is dependent upon the degree of activity and the extent of diffusion via lymphatic channels and tissue spaces of the lipase. By far the greater amount of fat necrosis occurs immediately about the pancreas. However, it is often seen widely disseminated throughout the peritoneal cavity, extending at times into the mediastinum. As a result of lipolytic activity, fat is hydrolyzed into glycerin and fatty acids. Ionized

14. Elman, R., and Schwarz, H., II: The Pancreas: Contributions of Clinical Interest Made in 1945, *Gastroenterol.* 8: 24-35 (Jan.) 1947.

15. Rich, A. R., and Duff, G. L.: Experimental and Pathological Studies on the Pathogenesis of Acute Hemorrhagic Pancreatitis, *Bull. Johns Hopkins Hosp.* 58: 212-259, 1936.

16. Boyd, W.: The Pancreas. *Surgical Pathology*, ed. 6, p. 349-355. Philadelphia: W. B. Saunders Co., 1947.

17. Nabatoff, R. A.: The Relationship of Pancreatic Duct Obstruction and Dilatation in Fat Necrosis of the Pancreas, *J. Mt. Sinai Hosp.* 15: 139-142, Sept.-Oct., 1948.

calcium then combines with fatty acids to produce calcium soaps, the greater percentage of which are insoluble, hence the formation of the areas of fat necrosis. The calcium plaques may be found in the first twenty-four hours of illness and after a two-week period may become so encapsulated with fibrous tissue that recognition is difficult. As a result of this heavy demand for calcium in the particularly severe cases, hypocalcemia ensues and the patient actually may die from tetany.

Various theories have arisen to explain the rise in serum amylase which accompanies acute pancreatitis. As a result of studies by Howard¹⁸ in experimentally produced pancreatitis, it has been shown that a much higher concentration of amylase is present in the serum of the pancreatic vein as contrasted with that of the serum in the pancreatic artery and aorta of the dog. As a result of these experiments, confirmed by the work of others, it is generally held that the chief pathway of amylase into the blood stream is by direct absorption into the latter rather than by way of the lymphatic channels.

Healing of the pancreas occurs by fibrosis and regeneration. If the obstruction is relieved before injury to the basement membranes of the acinar cells occurs, the latter recover and regain their secretory function. The degree of fibrosis is in direct relation to the extent of injury. It is noteworthy that recovery is almost complete following an attack of mild edematous pancreatitis. If pancreatic necrosis has occurred, residual distortion of the acini and marked fibrosis take place. Pancreatic function is regained after a variable period of time, depending on the severity of the inflammatory process. With each attack of acute recurrent pancreatitis, there is greater destruction of the normal elements with fibrous tissue replacement and gradual diminution in the internal and external secretion. This is reflected by the development of diabetes on the one hand and by the development of creatorrhea and steatorrhea on the other. At times encapsulation of the fluid takes place with the production of a pseudocyst.

18. Howard, J. M.; Smith, A. K., and Peters, J. J.: Acute Pancreatitis: Pathways of Enzymes into the Blood Stream, *Surgery* 26: 161-166 (Aug.) 1949.

SYMPTOMS AND SIGNS

The symptoms and signs reflect the degree and extent of pancreatitis. Moynihan¹⁹ has described acute pancreatic necrosis as "the most formidable of catastrophies." The most prominent symptom is that of pain, which is typically severe and sudden in onset. It is located in the upper abdomen, most often near the xyphoid, and, although radiation around either costal margin may occur, usually it is of a penetrating character often described as a "severe boring" type of sensation. This pain results from distention of the pancreatic capsule as well as irritation of the closely associated celiac plexus and peritoneal surface by toxic fluid.

Nausea and vomiting usually accompany the pain and, whereas, in the edematous form, vomiting is not a prominent symptom, yet in the hemorrhagic type severe vomiting is almost always present, resulting as mentioned above from irritation of the celiac plexus as well as inflammatory involvement of the duodenum. Constipation is usually present in the early stages followed by diarrhea as the disease progresses.

In the mild form of pancreatitis, shock does not occur but in the necrotic variety the element of shock is present to a varying extent. The symptoms of shock may be quite marked. There is a fall in blood pressure, a rapid pulse with a cold clammy skin, and the peculiar cyanosis which at times develops over the flanks. The last-named finding, Grey-Turner's sign, is attributed to extraperitoneal extravasation of hemorrhagic exudate and does not appear for 2 or 3 days. In the most severe cases, the patients may expire a few hours after onset of the illness. Depending upon the severity of the attack, there is a corresponding increase in rigidity of abdominal musculature although never reaching the boardlike character of that associated with perforated peptic ulcer.

The most striking and significant laboratory finding is an increase in the serum amylase due to occlusion of the duct system by edema. Elevation of the serum amylase is pathognomonic of the disease. This increment usually occurs within the first twenty-four hours and is maintained from 24 to 72 hours, depending on the severity of

19. Moynihan, Sir B.: Acute Pancreatitis, *Ann. Surg.* 81: 132-142 (Jan.) 1925.

the disease. The normal range of serum amylase in the peripheral blood is 80 to 160 Somogyi units per 100 cc. of serum. As a rule, there is a return to the normal level upon subsidence of the inflammatory process. The urinary diastase usually becomes elevated 12 to 24 hours after the increase in the serum amylase.

Other laboratory findings reveal a moderate leukocytosis and a progressive hemoconcentration. Hyperglycemia and hyperglycosuria are often found in cases of severe pancreatic necrosis. Also in such cases, hypocalcemia will occur.

The electrocardiographic tracing commonly shows abnormalities which may lead to confusion with coronary thrombosis. The pattern, however, returns to normal as the disease subsides.

DIFFERENTIAL DIAGNOSIS

Certain points will be briefly mentioned to aid in distinguishing acute pancreatitis from other disorders. The pain of acute pancreatitis is usually much more severe than that of perforated ulcer, whereas the rigidity of the abdominal wall is usually much less in acute pancreatitis than in perforated ulcer. Upright x-ray film of the abdomen is of definite value, as in 60 to 70 per cent of the cases of perforated ulcer air will be demonstrated under the diaphragm.

Acute intestinal obstruction should offer little difficulty in being distinguished from acute pancreatitis. In the former the onset is rapid, vomiting is persistent, and as it continues becomes fecal in character. Very little rigidity of the abdominal muscles is present and between attacks of pain the patient is relatively comfortable. Again x-ray examination of the abdomen will reveal evidence of distended loops of bowel.

The distinction between acute pancreatitis and acute mesenteric vascular occlusion can be difficult but the history often will indicate the presence of preexisting cardiac lesions and there may be signs of internal hemorrhage in vascular occlusion. In addition, the pain of vascular occlusion is more variable in its location than that of pancreatitis.

One of the more common disorders to be differentiated is that of acute cholecystitis, but the pain in the right upper quadrant of the abdomen with radiation to the back and

right scapular region, and the findings of tenderness and rigidity in the right upper quadrant, should aid in clarification.

At times the possibility of coronary thrombosis must be seriously considered and this is made more difficult by the fact that electrocardiographic changes occur in both disorders. The previous history of the patient is of definite help in this connection and serial electrocardiograms are valuable.

A vivid description of acute pancreatitis is presented by Dr. T. M. Furber²⁰ of Sydney, Australia, as follows:

"I well remember a man at Sydney Hospital who, while waiting in Dr. Hamilton Marshall's out-patient department, fell from his seat, labouring under what Lord Moynihan has so aptly called 'illimitable agony.' It was evident even to such mole-eyed students as we were that the unfortunate old man was stricken unto death, as he quickly became a dreadful, livid, ashen hue, and writhed and groaned in a calamity of pain, fighting for breath and calling on our Maker for help in what was truly his last extremity. Some three days later he died, as was discovered at autopsy, of pancreatic necrosis.

"Another picture which comes to mind is that of a decent, middle-aged widow, who lived virtuously alone with gallstones, which for years, in spite of advice, she had harboured and, I think, cherished. Soon after dinner one night she was overwhelmed by an abdominal cataclysm. When I saw her a few hours later she was sitting up in the middle of a big double bed, slowly rocking herself back and forth and gently moaning, but not taking the slightest notice of the bewildered females who clucked and fluttered around her, nor answering direct questions, for her sensorium was apparently saturated by the tremendous discharge of afferent stimuli from her abdomen. Knowing that she had gallstones, I guessed that she had acute pancreatitis, and advised her immediate removal to hospital; but while arrangements were being made her tempestuous daughter burst in on us like a southerly gale and whisked the unfortunate old lady to her own home, where the poor soul perished of what was proved at the coroner's autopsy to be pancreatic necrosis."

These words of Dr. Furber should serve well to instill into our minds the possibility of the existence of acute pancreatic necrosis whenever we are confronted with such pictures.

TREATMENT

The former principle of immediate operation in acute pancreatitis with its attendant relatively high mortality has largely been

20. Furber, T. M.: Some Surgical Pancreatic Diseases, *Med. J. Australia* 2: 405-408 (Oct.) 1940.

supplanted by non-operative management.^{21, 22, 23} Although the weight of surgical opinion favors non-operative treatment, there are a few groups who recommend emergency operative intervention.²⁴ However, throughout the country as a whole, the mortality rate has been lowered as a result of the adoption of a conservative attitude. The validity of this approach is predicated, of course, on the accurate diagnosis of acute pancreatitis, reference to which has been outlined above. The use of the serum amylase test is of inestimable value in achieving this aim. Always there must be taken into consideration the possibility of co-existing lesions which would warrant surgery.

Conservative management entails the application of certain measures. There must be adequate fluid and electrolyte replacement to combat hemoconcentration;²⁵ the use of glucose, saline, and appropriate vitamin preparations is of importance. Also, in the more severe cases blood and plasma are needed. By means of continuous gastrointestinal suction gastric dilatation is prevented and only a small amount of hydrochloric acid passes into the duodenum, thus eliminating the element of hormonal stimulation of the pancreas.²⁶ In addition, secondary ileus is successfully treated. Relief of pain is afforded by adequate use of demerol. As mentioned above, morphine is contraindicated due to its known effect in producing spasm of the sphincter of Oddi. Ofttimes spectacular relief of the severe pain is afforded by bilateral splanchnic block using 20-30 cc. of a 1 per cent solution of pro-

caine hydrochloride. Gage and Floyd,²⁷ who have used this procedure extensively, report prompt relief of pain thus minimizing the shock state. In addition, spasm of the ductal system is relieved with subsequent adequate drainage of the pancreatic channels as well as the gallbladder and common bile duct. The vascular spasm is corrected and an adequate blood flow to the pancreas re-established.

Atropine sulphate at four-hourly intervals and the concomitant use of ephedrine sulphate, as well as papaverine, are often of value in relieving spasm of the sphincter.²⁸

One of the outstanding achievements of recent years in lowering the mortality rate has been the use of antibiotics such as penicillin and streptomycin.

Certain laboratory procedures are indicated in order to follow the course of the patient adequately. These include estimation of the carbon dioxide combining power of the blood and the blood sugar level. At times diabetes is present as a result of the pancreatitis and may require insulin therapy. Calcium determinations should be performed since, as mentioned heretofore, in the more severe cases there is a great demand upon the calcium reserves of the body with a marked alteration in the calcium metabolism as a result of fat necrosis. It is of great importance to follow the patient closely to prevent a state of tetany. Adequate calcium therapy using calcium gluconate intravenously may be needed.

With the use of the measures outlined above, a great majority of patients will respond favorably and surgery can be indefinitely postponed. However, if there are signs of spreading peritonitis, the appearance of jaundice, or a rise in serum bilirubin, surgery is indicated. If surgery is performed, the simplest effective procedure should

21. Whipple, A. O.: A Discussion of the Lesions of the Pancreas Amenable to Surgery, *J. Mt. Sinai Hosp.* 15: 123-131, Sept.-Oct., 1948.

22. Paxton, J. R., and Payne, J. H.: Acute Pancreatitis, *Surg., Gynec. and Obst.* 86: 69-75 (Jan.) 1948.

23. Warren, K. W.: Acute Pancreatitis, *S. Clin. North America* 28: 741-751 (June) 1948.

24. Rhoads, J. E.; Howard, J. M., and Moss, N. H.: Clinical Experiences with Surgical Lesions of the Pancreas, *S. Clin. North America* 29: 1801-1816 (Dec.) 1949.

25. Doubilet, H., and Mulholland, J. H.: The Surgical Treatment of Pancreatitis, *S. Clin. North America* 29: 339-359 (April) 1949.

26. Morse, L. J., and Achs, S.: Acute Pancreatitis, *Ann. Surg.* 130: 1044-1058 (Dec.) 1949.

27. Gage, M., and Floyd, J. B.: The Treatment of Acute Pancreatitis with Discussion of Mechanism of Production, Clinical Manifestations and Diagnosis and Report of Four Cases, *Tr. South S. A.* 59: 415-442, 1948.

28. Muller, G. P.: Surgical Diseases of the Pancreas. *Textbook of Surgery*, ed. 4, p. 1157-1167. Edited by Christopher, F. Philadelphia: W. B. Saunders Co., 1945.

be utilized.^{29, 30} This resolves itself into decompression of the extra-hepatic biliary tree by cholecystostomy, thus relieving pressure in the pancreatic duct system. Drains should be placed down to Morrison's pouch to permit drainage of the lesser sac and down to the area of the inflamed pancreas. The former procedure of incising the pancreas in an attempt at drainage only provokes further bleeding, adds insult to an already diseased organ, and does not accomplish its purpose due to the inherent lobular structure of the pancreas. This measure is to be deprecated. After an interval of time, during which the patient shows improvement, signs and symptoms will at times supervene indicating the development of an abscess. Such development may require several days or 2 to 3 weeks. Once localization has occurred, adequate drainage should be accomplished without delay.

Upon subsidence of the attack of acute pancreatitis, certain studies are undertaken. These include a gastro-intestinal series, secretin tests,³¹ glucose tolerance curve, and a Graham-Cole series. As a result of these studies, disease of the gallbladder, with or without stones, will often be found. In such cases surgery is required, and at the time of operation common duct exploration should be routinely performed in each patient who has suffered from pancreatitis. By means of cholecystectomy and choledochostomy in selected cases, the incidence of further attacks of pancreatitis is definitely lowered.

CHRONIC PANCREATITIS

In recent years chronic pancreatitis has become increasingly recognized as a cause of recurrent episodes of upper abdominal pain. Formerly the clinician usually applied the term "chronic pancreatitis" only to those cases in which one or more of the three characteristic sequelae (calcification, diabetes, and steatorrhea) had developed. How-

ever, as a result of the illuminating work of Gambill, Comfort, and Baggenstoss,³² it is now known that the existence of chronic pancreatitis is not necessarily dependent upon the presence of one or all of the above triad. The term "chronic" has been applied simply to indicate the recurring nature of the process and the persistence of pathologic changes during the intervals between acute attacks. Mulholland and Doubilet have used the term "recurrent acute pancreatitis." Gambill, Comfort, and Baggenstoss, as a result of a large experience, have clearly established chronic relapsing pancreatitis as a definite clinical entity.

This abnormal state is characterized by recurring attacks of upper abdominal pain and by disturbances in function of the islet and acinar cells. There are all degrees of pathologic change ranging from edema to fibrous-calcification and necrosis. Cysts may result as well as abscesses. Gastro-intestinal hemorrhage occurs fairly often. The chronic state may or may not be related to disease of the gallbladder and bile ducts. Indeed Gambill, Comfort, and Baggenstoss question the dependence of pancreatitis upon pre-existing biliary tract disease. As a matter of fact, evidence is presented to show that biliary tract disease may well follow pancreatic disease or the two may be coexisting conditions as a result of the same basic cause.

Typically, jaundice is often present along with creatorrhea and steatorrhea.

Opie has classified chronic pancreatitis into the interacinar and interlobular varieties. The basic pathology is an increase in the fibrous connective tissue in the pancreas. This may be associated also with areas of calcification which occur either in the parenchyma of the gland or in the duct system. The extent of this fibrosis determines the degree of loss of activity of the acinar and islet cells. Diabetes may be a prominent feature necessitating insulin therapy. The deficit in external pancreatic secretion is the cause of "chronic indigestion."

The patient when usually seen shows evidence of weight loss and has yellow or gray-

29. Brunschwig, A.: *The Pancreas and Adrenal. Operative Technique*, p. 479-496. Edited by Cole, W. H. New York: Appleton-Century Crofts, Inc., 1949.

30. Orr, T. G.: *Operations upon the Pancreas. Operations of General Surgery*, p. 427-436. Philadelphia: W. B. Saunders Co., 1949.

31. Doubilet, H.: Value of the Secretin Test in Surgery, *S. Clin. North America* 29: 489-499 (April) 1949.

32. Gambill, E. E.; Comfort, M. W., and Baggenstoss, A. H.: Chronic Relapsing Pancreatitis: An Analysis of 27 Cases Associated with Disease of the Biliary Tract, *Gastroenterol.* 2: 1-33 (July) 1948.

ish, fatty or greasy, bulky, foul stools. Pain located in the epigastrium radiates through to the back and is aggravated by ingestion of fats or meats. Fatty degeneration of the liver usually is present and is indicated by hepatomegaly. X-ray of the abdomen will often show calcification in part or all of the pancreas.

As to therapy in cases of chronic relapsing pancreatitis, it is generally held that adequate medical management is confined to symptomatic palliation. This includes regulation of diet which should be essentially high protein, high carbohydrate, high vitamin, and low fat in character.³³ The use of pancreatin tablets three times a day is indicated, as well as supplemental vitamins. If amylase activity is reduced, taka diastase or a similar compound may be taken with meals.³⁴ Demerol is often necessary during a painful attack. In addition, adequate insulin dosage may be required if diabetes is present. Under such supportive therapy the clinical course will at times be improved.

However, if recurrent pain occurs, particularly in the presence of calcification, surgery is indicated. Surgical attack has been waged on several fronts to meet the problem of chronic relapsing pancreatitis. Remissions have been brought about following cholecystectomy or cholecystectomy plus choledochostomy. The use of permanent T-tube drainage and choledochoduodenostomy have been advocated and are of great benefit in stopping the painful attacks and the progress of the disease.

CASE REPORT

Case 1—L. J. R., white female, aged 71 years, was first seen at the Clinic on August 17, 1949 with a chief complaint of abdominal pain. For the previous five years she had suffered from severe, recurrent, penetrating upper abdominal pain with associated nausea, vomiting, and at times jaundice. During the interval between attacks, there was almost constant upper abdominal discomfort. A weight loss of 15 pounds in the past year had occurred. Increasing weakness and malaise were prominent features.

Complete gastro-intestinal study, including gastro-intestinal series, barium enema, duodenal drainage, and stool examinations, were all within normal limits. A Graham-Cole series revealed a large gallbladder with fair function and no

stones. Liver and renal function studies were normal. Repeated estimations of the serum amylase revealed values below normal. Medical therapy employing all of the measures outlined above over a period of several months failed to relieve the severe abdominal pain.

Accordingly, the patient was admitted to the Highland Baptist Hospital and prepared for surgery. On March 24, 1950, operation was performed, at which time the gallbladder was found to be two and one-half times normal size, with slight thickening of its walls. Likewise the common duct was dilated, with slight thickening of the wall. The pancreas was uniformly firm and slightly enlarged. There was evidence of numerous adhesions about the region of the gallbladder. Cholecystectomy and exploration of the common bile duct with T-tube drainage was accomplished. The patient improved steadily following operation.

Five months have now elapsed since operation, and the patient's condition is excellent. During this interval following operation, there has been complete absence of the abdominal pain and other symptoms from which the patient suffered for five years prior to surgery. The T-tube at the present time is clamped continuously, except for one hour each night.

This case illustrates the usually beneficial result which may be obtained from cholecystectomy and choledochostomy in the treatment of chronic pancreatitis. A prolonged reduction in the extra-hepatic biliary system pressure is afforded by this means. Generally favorable results have been reported throughout the country, although relief from pain may not be permanent.

If chronic duodenal obstruction has occurred, a side-tracking procedure is indicated, such as gastrojejunostomy. If a pancreatic pseudocyst has formed, drainage externally by marsupialization or internally by pancreatic cysto-enterostomy is applicable.^{35, 36} In this connection the following two cases are presented to illustrate the management of pancreatic cysts and fistulae.

Case 2—E. C. K., white soldier, aged 30 years, sustained multiple injuries including abdominal trauma as a result of a truck accident on June 1, 1945 in Germany. Severe, penetrating upper abdominal pain with associated nausea and vomiting were followed in a few days by the development of progressive jaundice.

35. Warren, K. W.: Pancreatic Cysts, *S. Clin. North America* 28: 753-760 (June) 1948.

36. Dozzi, D. L.: Chronic Pancreatitis, Tuberculosis of the Pancreas, Syphilis of the Pancreas. *Gastroenterology*, Vol. III, p. 792-798. Edited by Bockus, H. L. Philadelphia: W. B. Saunders Co., 1946.

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Twelve days after injury a large mass occupying the greater portion of the right upper quadrant of the abdomen was noted, and patient was transferred to Lovell General Hospital, Massachusetts, where the blood serum amylase was reported as 378 units.

On August 21, 1945, patient was operated upon, at which time a large pancreatic cyst was found and marsupialization performed. Postoperatively the patient's abdominal pain improved, only to recur at intervals whenever the drainage from the fistulous tract diminished in amount.

Amylase determinations were performed on the fluid from the pancreatic fistula with a range of 2,040 to 4,396 units per 100 cc. fluid. Blood sugar determinations were normal.

The patient then was transferred to Walter Reed General Hospital, Washington, D. C., where on examination his nutritional status was found to be only slightly below normal. There was a low grade inflammatory reaction about the draining sinus in the region of the previous abdominal operative wound. Patient continued to suffer



Case 2—Fig. 1. PA roentgenogram. Lipiodol injection of the fistulous tract demonstrating the cyst located in the head of the pancreas. Practically the entire length of the duct of Wirsung is visualized in this film.

from recurrent episodes of pancreatitis. Repeated serum amylase estimations ranged from 27.5 units to 347 units. Values for total serum protein, albumin-globulin ratio, icterus index, fasting blood sugar, urea nitrogen, alkaline phosphatase, complete blood count, and urinalyses were all within normal limits. Examination of a specimen of the fluid from the pancreatic fistula revealed: trypsin negative, amylase 2,070 units per 100 cc. of fluid. Stool examinations were essentially negative. Lipiodol injection of the fistulous tract on April 26, 1947 revealed the

presence of a small cyst located in the region of the head of the pancreas. In addition the duct of Wirsung was clearly visualized throughout its extent.

On May 7, 1947 operation was performed under inhalation anesthesia. The pancreas was found to be enlarged to one and one-half times its normal size and very indurated throughout. The well-defined fistulous tract which arose from the region of the junction of the head and neck of the pancreas was anastomosed to the



Case 2—Fig 2. Lateral roentgenogram revealing the position of the cyst and the duct of Wirsung in relation to the vertebral column.

descending portion of the duodenum. Patient's postoperative course was essentially uneventful with the exception of several episodes of mild abdominal pain. Follow-up eight months after operation revealed that patient's digestion was normal and his general condition was excellent with only an occasional episode of mild abdominal discomfort.

Case 3—T. H. H., white soldier, aged 29 years, became involved in an altercation during a heavy drinking bout on December 14, 1947. During the fight that ensued, patient fell over an iron rail sustaining a severe blow to his abdominal region. Marked abdominal pain with nausea and vomiting followed. Examination revealed moderate abdominal wall rigidity with tenderness in the epigastric region. The serum amylase within the first twelve hours after injury was 270 units. A leucocytosis of 14,400 with 76% polymorphonuclear leukocytes was recorded. The serum amylase rose steadily to a value of 790 units four days after injury and for the following two months ranged between 400 and 1,270 units. Patient was treated conservatively with the usual measures.

Approximately seven days after injury, a

cystic mass was noted in the left upper quadrant of the abdomen. This mass was followed closely and it appeared to enlarge over a period of the next several days.

The patient was transferred to Walter Reed General Hospital, Washington, D. C., where operation was performed on February 14, 1948. At that time a large pancreatic cyst containing 1,000 cc. of fluid was found. Due to the very friable edematous nature of numerous loops of small bowel, which were closely attached to the wall of the cyst, it was not deemed feasible to attempt an anastomosis. External drainage was affected by marsupialization.

Drainage from the pancreatic fistula continued for several months and the patient suffered from repeated attacks of pancreatitis. Spontaneous closure of the fistulous tract failed to occur within a period of one year after the operation even though all of the customary measures designed to promote closure were used.

Accordingly at the end of this time anastomosis of the fistulous tract to a loop of jejunum approximately 18" distal to the ligament of Treitz was accomplished. The pancreas showed no evidence of enlargement, but was extremely firm. This induration was diffusely present throughout the entire pancreas. With exception of an occasional episode of abdominal discomfort, the immediate postoperative period was uneventful. Approximately one month following pancreatic fistulo-jejunostomy, patient again suffered from recurrent episodes of rather severe abdominal pain. The use of procaine intravenously, bilateral splanchnic block, and tetra-ethyl-ammonium chloride intramuscularly all aided in alleviating the attacks. Subsequently patient improved and follow-up twelve months after surgery revealed that patient's general condition was good and he suffered only with minimal abdominal discomfort.

In dealing with pancreatic pseudocysts the procedure of choice, whenever feasible, is complete local excision. This can be done in many cases by careful dissection. In other instances, however, such a procedure is too hazardous since adjacent friable bowel may be injured or undue hemorrhage may occur. Accordingly the procedure of anastomosis of the cyst to the stomach, duodenum, or jejunum has been acclaimed as a result of its relative simplicity and safety. It is to be borne in mind that primary anastomosis of the cyst to a portion of the gastrointestinal tract is at times contraindicated due to technical factors as mentioned above with reference to extirpation of a cyst. In the cases reported the large pancreatic cyst in each instance was marsupialized. A rather long period of drainage from the fistulous tract followed. The tract then in turn was anastomosed in the one instance to the

duodenum and in the other instance to a loop of jejunum, thus providing internal drainage of the pancreatic secretion.

In the presence of calculi within the main pancreatic channel, particularly in those cases with associated disabling pain, removal by pancreatolithotomy is indicated.³⁷ If an abscess has formed, adequate drainage is in order. Vagotomy has been proposed as a procedure designed to minimize the incidence of recurrent pancreatitis. By this means the acid gastric secretion is reduced to a minimum and the direct stimulation to the pancreas is decreased. Only a few cases have been done and results are questionable.

Richman and Colp³⁸ recommend the employment of subtotal gastric resection. These authors cite a case of chronic pancreatitis of fourteen years' duration in which a gastric ulcer developed. Subtotal gastrectomy was performed and subsequently prompt cessation of pain, steatorrhea and creatorrhea occurred. It is evident that the modes of attack upon chronic pancreatitis are varied.

It is well known that due to the recurrent nature of the severe pain a fairly large percentage of patients suffering from chronic pancreatitis become addicted to opiates. In such cases resection of a part or all of the pancreas has been done with variable success. It is necessary in such instances, of course, to substitute for the deficit which occurs following removal of the pancreas. Pancreatic resection is a formidable procedure³⁹ and has given way in current thinking to the use of sympathectomy as developed by Smithwick and later employed by Ray.⁴⁰ This operation entails bilateral resection of the greater splanchnics and the sympathetic chains from the eleventh thoracic to the first lumbar, thus producing in-

37. Dozzi, D. L., and Bockus, H. L.: Pancreatic Lithiasis and Calcification of the Pancreas. *Gastroenterology*, Vol. III, p. 799-806. Edited by Bockus, H. L. Philadelphia: W. B. Saunders Co., 1946.

38. Richman, A., and Colp, R.: Subtotal Gastrectomy in the Treatment of Chronic Recurrent Pancreatitis, *J. Mt. Sinai Hosp.* 15: 132-138, Sept.-Oct., 1948.

39. Graham, E. A.: Pancreas. *Yearbook of General Surgery*, p. 470-495. Chicago: Yearbook Publishers, 1949.

40. Ray, B. S., and Console, A. D.: The Relief of Pain in Chronic (Calcareous) Pancreatitis by Sympathectomy, *Surg., Gynec. and Obst.* 89: 1-8 (July) 1949.

terruption of the pain pathways from the pancreas. It is much safer than resection of the pancreas. In neither the male nor the female are the sexual and reproductive functions altered by employment of sympathectomy as outlined.

Such a nerve cutting procedure, however, means that the visceral pain component of certain abdominal diseases, such as cholecystitis, appendicitis, and peptic ulcer, is eliminated. This must be considered in appraising any future pathologic process related to these structures which may develop.

Doubilet and Mulholland⁴¹ recommend endocholechochal sphincterotomy to relieve spasm of the sphincter of Oddi. The use of sphincterotomy, originally proposed and executed by Archibald⁴² transduodenally in 1918, is based on the demonstration by cholangiographic study of a common passageway in patients suffering from recurrent pancreatitis. By means of a cleverly devised sphincterotome the sphincter of Oddi is sectioned; whereupon it retracts and heals in the position of retraction. However, the intact duodenal wall musculature is not disturbed and this prevents reflux of duodenal contents into the biliary tree. Excellent results have been reported in preventing further attacks of pancreatitis.

The acute exacerbation in chronic pancreatitis should be treated medically. Therapy is directed along the same lines as outlined above in the treatment of acute pancreatitis.

SUMMARY

1. Factors relating to the cause of pancreatitis are discussed.
2. Pathologic features of acute and chronic pancreatitis are reviewed.
3. Symptoms and signs of pancreatitis, together with points in differential diagnosis, are outlined.
4. Emphasis is placed on the non-operative management of acute pancreatitis. Conservative therapy is based on accurate diagnosis.

41. Doubilet, H., and Mulholland, J. H.: The Surgical Treatment of Recurrent Acute Pancreatitis by Endocholechochal Sphincterotomy, *Surg., Gynec. and Obst.* 86: 295-306 (March) 1948.

42. Archibald, E.: The Experimental Production of Pancreatitis in Animals as the Result of Resistance of the Common Duct Sphincter, *Surg., Gynec. and Obst.* 28: 529-545 (June) 1919.

5. Surgical measures employed in the treatment of chronic pancreatitis are discussed. Three illustrative case reports are presented.

Infantile Eczema—Eczema in infants and small children is a condition which is vexing to the parents and to the physician, as well as to the patient, for despite the best efforts of a succession of physicians, the eczema may be difficult to control and probably will not be terminated until it does so spontaneously when the child is about 3 years of age. Even then, it is probable that other symptoms of the "eczema-asthma-hay fever" complex may persist—50 per cent of all children who suffer from infantile eczema develop asthma. Nevertheless, there are steps which the physician can recommend to alleviate the itching and discomfort of infantile eczema and to allay the anxiety of the parents.

Although it is usual to suspect food as the allergic irritant, the child should not be deprived of various foods just because he scratches or has a skin eruption. He should continue to have a diet sufficiently nutritious to maintain good health and promote growth; rickets and scurvy can develop when supplementary foods are removed without a substitute being made.

Stuffed toys should be avoided and unpainted wood or plastic toys used instead. Animals should be excluded entirely. Woolen and silk materials should be avoided.

Some ointments used in the treatment of eruptions will only aggravate the condition, and the parents should be warned against trying every neighborhood "cure-all." Roentgen-ray treatments should not be given in cases of infantile eczema, for permanent skin damage and even skin cancer have been observed in adults who received roentgen-ray therapy for infantile eczema. Poison ivy and other injections are worthless. Children with eczema should not be vaccinated against smallpox during the acute stage; serious or even fatal consequences may result. However, the results of diphtheria, whooping cough, and tetanus antitoxins need not be feared.

It should be remembered that some children with eczema are highly allergic to bites of insects such as mosquitoes, ants, and bees. Treatment to reduce sensitivity to such bites may be helpful. If an insect sting produces a severe reaction, the physician may find it necessary to administer adrenaline, or at least one of the antihistamines.

An effort should be made to treat the child psychologically, erasing if possible any insecurity factors which may exist. In attempting to create a wholesome environment for the child, the physician can help by reassuring the parents that the child's condition is not contagious, that there will be no scars, and that otherwise he is healthy and normal. The parents should also be warned to expect the eczema to show a cyclic pattern, with the eruptions usually being worse in the winter and better in the summer.—*Texas State J. Med., Sept. '50.*

TREATMENT OF TYPHOID FEVER

REPORT OF CASE

J. M. HUMPHRIES, M. D.

and

D. H. SPARKS, M. D.

Birmingham, Alabama

In the past few years rapid advances in public health have brought about a sharp decrease in the incidence of typhoid fever; nevertheless, the occurrence of 6 cases in the City of Birmingham, Alabama, in 1949 justifies the report of this case.¹ The case further substantiates the work of Woodward and others² that chloramphenicol (chloromycetin) rapidly ameliorates the symptoms of the prolonged and debilitating disease.

REPORT OF CASE

D. P., an 8 year old white male, was first seen in his home on Sept. 2, 1949. History revealed that he became ill 4 days earlier with severe headache and high fever. During this time he had been given intramuscular penicillin but had shown no response. His grandmother, who had been hospitalized 4 to 5 weeks earlier for an acute febrile disease of unknown origin, had remained at this child's home several days after being discharged from the hospital some 3 weeks previous to the onset of his illness. He had received immunizations for diphtheria and pertussis but none for typhoid.

For 4 days his temperature had ranged between 102° and 104° F. Physical examination revealed a moderately ill and dehydrated male child who complained of a severe headache. There was slight distention of the abdomen; otherwise, the examination was not remarkable. Urinalysis was negative. The leucocyte count was 6,850, with 62 per cent neutrophils, 21 per cent lymphocytes, 10 per cent monocytes, 5 per cent juveniles and 2 per cent unidentified. Blood films for malaria were negative, as were the initial blood cultures and agglutinations for the various febrile diseases.

The following day the spleen was felt 2 cm. below the costal margin and was definitely tender. The high temperature and headache persisted and there was moderate nuchal rigidity. After ascertaining from the family that typhoid fever had been ruled out as the cause of the grandmother's illness, it was felt that the most logical clinical diagnosis in this case was typhus fever. Aureomycin was then started in commonly used therapeutic doses. During the next

four days the fever and headache continued unabated, and he developed superficial ulcerations of the mucous membrane of the mouth and pharynx as large as one centimeter in diameter. Blood for agglutinations taken on Sept. 7 was positive for typhoid O antigen in dilution of 1:320.

When the report of the positive agglutination for typhoid was received on Sept. 8, the aureomycin was discontinued as he had shown little if any response to the drug. He was then started on chloramphenicol with an initial dose of one gram followed by 0.25 gram every 4 hours for 3 days, then 0.25 gram every 6 hours for 7 days. Eighteen hours after starting the chloramphenicol, the patient became afebrile and showed a dramatic clinical improvement. His appetite improved and he rapidly gained weight. There was no evidence of relapse for 6 months following the infection. One blood culture taken on the 6th day of his illness was later reported positive for *Bact. typhosum*. Additional agglutination tests on Sept. 10 were also positive. Repeated cultures of excreta taken during the febrile and convalescent periods were negative.

COMMENT

The course of the disease in this case did not seem to be altered by aureomycin therapy. As soon as the agglutination test revealed the possibility of a typhoid infection, chloramphenicol was started in doses comparable to that reported by Woodward and others.² Since the drug was not started until the 12th day of the disease, one might think that the temperature drop was the result of the natural course of the disease; however, the clinical improvement of the patient's condition was dramatic and the prolonged administration of chloramphenicol probably prevented any relapse which is so common with this disease.

With the minimal case of tuberculosis, diagnosis is rarely the clear-cut matter it is in more active, progressive, and advanced cases. It may involve, frequently, the most tedious follow-up and most painstaking analysis and evaluation. These are the lesions which, under normal circumstances, rarely get the doctor's care because of their obscurity and elusiveness—those which may be forever the "silent" lesions in tuberculosis.—Robert J. Anderson, M. D., *Journal-Lancet*, April 1950.

1. Hewes, R. C.: Personal Communications.

2. Woodward, T. E.; Smadel, J. E.; Ley, H. L., Jr.; Green, R., and Mankikar, D. S.: Preliminary Report on the Beneficial Effect of Chloromycetin in the Treatment of Typhoid Fever. *Ann. Int. Med.* 29: 131-134, 1948.

PEDIATRIC CASE REPORTS

Edited by
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Case presented by

Benjamin P. Clark, M. D.

This white male infant, E. C. G., was born about 2 P. M., December 5th, 1949. The delivery was essentially normal. On December 7th at about 1:50 A. M. (some 36 hours after delivery) the nursery attendant noted that the child vomited immediately after a feeding and that there were about two ounces of bright red blood in the vomitus. Thirty minutes later it was noticed that the infant was restless and would "gag" occasionally. Respirations at this time were rapid and shallow, and the infant vomited blood again at 2:35 A. M. The infant vomited blood again at 4:30 A. M., and immediately thereafter passed a large bloody stool. There were several other bloody stools during the early hours of the morning. The infant was first seen about 8:15 A. M. At that time he was obviously in shock and was quite pale. Erythrocytes were 3,650,000 and hemoglobin 91 per cent.

The infant was immediately started on synthetic vitamin K intramuscularly, and an emergency transfusion of matched fresh blood was given by ankle "cut down." There was no further bleeding although the infant did have several tarry stools during the next 24 hours. He was discharged on the 10th day and has done well since.

This white female infant, S. J. B., was born at 12:10 P. M., March 29th, 1950. The delivery was normal and the infant weighed 7 lbs., 12 oz. At 1:00 P. M. on the 31st (about 48 hours after delivery) it was noted that the infant had passed some blood in the stool. Two hours later the infant was spitting up bright red blood. When first seen at 8 P. M., the infant was only moderately pale and showed no evidence of shock. Erythrocytes were 5,850,000, with 17 gm. of hemoglobin. Synthetic vitamin K, one ampule every four hours intramuscularly, was started. There were no further bright red stools, although a few tarry stools were passed during the next 24 hours. The infant did not again vomit blood and was discharged from the hospital two days later.

In neither of these two cases did the moth-

er receive vitamin K immediately prior to delivery.

DISCUSSION

We have presented here two cases of spontaneous bleeding from the gastro-intestinal tract during the newborn period. One was of unusual severity and was accompanied by shock and anemia; the other was fairly mild and there was no manifest anemia.

Any bleeding occurring during the first six days of life should be considered to be due to hemorrhagic disease of the newborn and should be treated as such, since early treatment is more effective and no harm will be done should the bleeding be due to other causes. Syphilis and septicemia should be considered in such cases. In syphilis the bleeding is apt to be somewhat later, and in septicemia there are usually other symptoms.

The exact cause of hemorrhagic disease is unknown. There is a low prothrombin blood level during the first week of life but many infants with such a low level do not show the hemorrhagic tendency. It is therefore thought that there is a second unexplained factor in the production of this condition. Because of the fact that vitamin K will prevent the disease and is effective in the treatment, it is sometimes spoken of as a vitamin K deficiency disease. It occurs in less than 5 per 1000 newborn infants. The bleeding may occur from any site and is usually spontaneous. Skin hemorrhages, umbilical bleeding, bleeding from the conjunctiva, retina, nose, mouth, lungs, gastro-intestinal and genito-urinary tracts, and in the central nervous system are common. Adrenal hemorrhages occur. Usually more than one site is involved in the same infant, and the onset, while occasionally abrupt, is more often gradual. If abrupt, anemia and shock may develop early. Bleeding time is usually prolonged and coagulation time often longer than normal for newborns. Clot retractility is normal, as is the platelet count.

Prognosis depends upon the site and severity of the hemorrhage and the promptness with which treatment is started. Hemorrhage into the brain and adrenal glands is more serious than skin hemorrhages. There are usually no sequelae even from cerebral bleeding.

The disease can almost always be prevented by administration of vitamin K to the mother more than two hours prior to delivery or to the child immediately after delivery. Since premature infants are more subject to this condition, vitamin K should be given to all premature infants and to all full-term infants who show any hemorrhagic tendency and to all who have had a difficult delivery. Elective surgery, such as circumcision, should be postponed until after the seventh day of life. If an emergency operation must be done during the first few days of life, the infant should be given vitamin K, and fresh blood should be available for transfusion. Stored blood is apt to be low in prothrombin.

In the treatment of active hemorrhage of the newborn, vitamin K should be given intramuscularly or intravenously. If the bleeding is quite severe, or if there is shock or anemia or both, transfusions of fresh matched blood should be given. Fresh serum may be used to control hemorrhage and combat shock but has no effect on the anemia. Transfusions will control the bleeding during the two to four hours before vitamin K has affected the prothrombin level. Unmatched blood should not be used and intramuscular or intraperitoneal blood injections have no effect on the prothrombin level.

Intracranial Tumor—Approximately half of the patients with intracranial tumor show papilledema or "choked disks" at the time of the first examination. This condition is an expression of a general increase in the intracranial pressure; when it exists in high degree for any great length of time, secondary optic atrophy and failing vision occur. This may progress to blindness and is not improved by subsequent lowering of the intracranial pressure to normal. Ninety per cent of patients showing papilledema have intracranial tumor, and its detection should lead to prompt investigation to confirm or eliminate that condition. The tendency of physicians to discontinue the use of the ophthalmoscope on account of the infrequency of positive findings greatly delays the recognition of many intracranial tumors. A physician not confident of his ability to recognize papilledema owes his patients with recurring severe headache referral for ophthalmological examination. Patients with increased intracranial pressure, particularly that developing rapidly, often show an increased tendency to sleep, and in the latter course of their disease they become stuporous or semicomatose. The development of stupor or coma is an urgent indication for the completion of studies leading to a definite diagnosis.—*Snodgrass, J. Indiana M. A., Sept. '50.*

Acute Arterial Obstruction — The immediate treatment of acute arterial obstruction is guided by the well-known dictum, do no harm. Do not apply heat, do not apply pressure, do not elevate.

The local application of heat increases the metabolic demands of the tissues. In the presence of acute arterial obstruction, since the quantity of blood which can reach the part is mechanically limited, the application of heat locally serves only to increase the discrepancy between the needs of the tissues and the supply of blood available to meet those needs. Application of extreme cold should also be avoided, since the tissues are injured thereby. The authors have never seen an extremity saved which was packed in ice in the treatment of acute arterial obstruction. It is advisable to maintain the extremity at a room temperature of 75° F. or below or possibly even to apply cold, wet towels, but this is only of use as emergency treatment until the mechanical obstruction has been relieved or until collateral circulation has taken over the function of the obstructed vessel.

Avoidance of pressure is essential in the treatment of acute arterial obstruction. Not only should pressure from encasing plaster or circular bandages be avoided, but also the pressure upon bony parts caused by the weight of the extremity itself. Pressure over the heel and the lateral malleolus should be prevented by supporting the lower leg on a pillow or soft, rolled-up blanket. The extremity should be placed in a position of relaxation with partial flexion at the joints. If immobilization is required because of soft tissue injury or fracture, it should be achieved without the use of external pressure. A posterior plaster splint, a pillow, or even skeletal traction is to be preferred to any form of treatment which exerts pressure upon the tissues. In the presence of acute arterial obstruction, the pressure in the smaller blood vessels is already low. Complete ischemia may be produced by even the mildest compression.

Since the pressure in the smaller blood vessels is already low, elevation of the extremity above the level of the heart will only serve to exaggerate the ischemia. On the other hand, dependency may produce edema with consequent increase in tissue pressure and obstruction of collateral blood flow. It has been repeatedly emphasized that the optimum position of the extremity is at or just below the heart level.

Concern for the extremity should not be so great that the general condition of the patient is overlooked, for the condition of the patient will have much to do with the ultimate fate of the extremity. The collateral blood vessels, upon which the survival of the extremity depends in the first few hours after acute arterial obstruction, are under vasomotor control, and the character of the blood within them is of importance. Shock must be treated not only because of the low blood pressure associated with this condition but also in order to relax the blood vessels and permit an adequate volume of blood to flow to the tissues.—*Freeman & Gilfillan, California Med., Sept. '50.*

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THE DOCTOR-DRAFT ACT

President Truman signed the Doctor-Draft Act on September 9, 1950. This legislation is a grant of authority to the President. Details of administration wait on Selective Service and military regulations, to be issued on the basis of this authority. Pending these announcements, the following are all the known facts, according to the Washington office of the American Medical Association:

Who Must Register? Physicians and dentists who have not reached the age of 50 and who are not members of military reserves; and veterinarians, optometrists, pharmacists, osteopaths and/or other specialist categories if specified by the President. (The law specifically states that it does not apply to military reserves; they are already subject to military orders.)

Who Are Eligible For Draft, And In What Order Will They Be Called? Any registrant (above) is subject to induction if acceptable to the military. The law provides that registrants will be called up on the following priority:

1. Former ASTP and V-12 men who have not served on active duty (military, Coast Guard or Public Health Service) and others deferred from service to continue their education during World War II, and who have had less than 90 days of active duty (military,

Coast Guard or Public Health Service).

2. Members in the above groups who have had more than 90 days active duty (military, Coast Guard or Public Health Service) but less than 21 months.

3. With no reference to the above groups, those who did not have active service (military, Coast Guard or Public Health Service) subsequent to September 16, 1940; this could include postwar medical graduates as well as other physicians who have not served and have not reached their 51st birthday.

4. All others, including World War II non-reserve veterans. Men in this group are to be called on the basis of extent of duty; those with least duty first, and so on.

When Will Draft Take Effect? Not until the President sets a time for registration. While there is nothing official on the subject, the registration deadline will probably be in the next few weeks. Men will register at appropriate points of registration in the community. After registration, Selective Service will place the man in one of the four classes listed above. Then, if he is to be called, he will be ordered up for his physical. Following this, 21 days will be allowed him in which to set his affairs in order before reporting to the Armed Forces Induction Station. Subsequently he will be offered a commission and assignment to a service.

Can Registrant Get Reserve Commission? Yes, if acceptable to the military. If the man applies for and is granted a reserve commission, he will come under military orders and Selective Service will not process him further.

Who Gets The \$100 Pay Bonus? Every reserve officer called to duty, on voluntary or involuntary basis, receives the extra \$100 per month. Men required to register under this legislation also may qualify for the \$100—but only if they volunteer prior to their actual induction.

Who Is Eligible For Deferment? Actual deferment is at the discretion of local Selective Service boards. However, the law states that the President is authorized to provide for certain deferments. Action under this clause would be based on the registrant's previous military service, his dependency status and any undue hardship that might ensue.

Will The Profession Advise Selective Service On The Men To Be Called? Yes. The law provides for the establishment of a National Advisory Committee which shall advise the Selective Service system and coordinate the work of state and local volunteer advisory committees with respect to selection of needed professional personnel. The Committee will be composed of men outstanding in medical, dental and allied services. The medical and dental professions must be represented on the National Advisory Committee but representation of other professions is not required. The law does not control local advisory committees; whether these are established and made effective depends on local conditions.

Will Draft Create Critical Doctor-Shortage Areas? Conceivably it might, but the law itself attempts to set up safeguards. It says the national, state and local committees shall give appropriate consideration to civilian as well as military, medical and dental requirements. Another section underscores this policy: Maintenance of national health, safety or interest shall be considered in granting deferments. In calling up reserves, Army commanders also are under orders to give careful consideration to doctor-shortage areas.

How Many Will Be Drafted? Military medical officers hope enough men now will volunteer to meet requirements. They are prepared to use the law's authority for mandatory inductions but are confident these cases will be rare. They are hopeful that the \$100 bonus, which is denied men involuntarily inducted, will attract registrants to volunteer.

Other Provisions: One section of the law authorizes transfer of medical officers from one service to another with the consent of the officer and of the services involved. Officers are protected in promotion, retirement and pay. Another section provides that any person who served in the armed forces or the Public Health Service after September 16, 1940, and is recalled, may be promoted to a grade commensurate with his education, experience and ability. The law states further that it is the sense of Congress that Selective Service deferments will be granted premedical, predental and allied students in numbers equal to the present such enrollment. This ruling more or

less formalizes the present Selective Service policy and sets a total figure for deferments in each professional category. Inductees under the doctor-draft will be required to serve 21 months, and the law, an amendment to the Selective Service Act, expires with that law next July unless extended by Congress.

AUREOMYCIN

"Aureomycin is probably the most important development in antibiotic therapy since the introduction of penicillin. Fortunately, like chloromycetin (chloramphenicol), it can be effectively administered by the oral route. The substance is elaborated by *Streptomyces aureofaciens* and was first described by Duggar. It has been found to be bacteriostatic, as well as bactericidal, for a number of important gram-negative and gram-positive microbes. Furthermore, it has been shown that rickettsiae are sensitive to its action. In spite of early reports concerning its effectiveness against certain viruses, it would appear that as an antiviral agent it has considerable limitations, which will be mentioned later. That aureomycin possesses considerable antispirochetal activity was evident from studies reported from the Clinic. It is of considerable practical importance that many penicillin-resistant and streptomycin-resistant, as well as streptomycin-dependent, organisms are susceptible to its action."

Thus does Herrell¹ begin his brief but most interesting discussion of the clinical use of aureomycin. The Rochester observer goes on to tell us that "Aureomycin readily traverses the blood-brain barrier and diffuses readily into the cerebrospinal fluid. It is, therefore, an effective agent in the treatment of infections of the central nervous system, including pyogenic infections, as well as neurosyphilis."

And we are further told that "If for any reason patients are unable to receive aureomycin by the oral route, it may be desirable to administer it by the intravenous route. Preparations of aureomycin for intravenous administration are now available." And the author warns that "Considerable local irri-

1. Herrell, Wallace E.: Observations on the Clinical Use of Aureomycin, Proc. Staff Meet., Mayo Clinic 24: 612 (Dec. 7) 1949.

tation and pain result from the intramuscular injection of aureomycin and in its present form it should not be given by the intramuscular route."

Herrell states that "Aureomycin has proved exceedingly effective in the treatment of scrub typhus, as well as endemic typhus. It has been reported to be of value in the treatment of Q fever, rickettsialpox and Rocky Mountain spotted fever."

The following paragraph is indeed significant: "The possible value of aureomycin in the treatment of certain viral diseases has received the attention of a number of investigators. It is, indeed, exceedingly effective in the treatment of lymphogranuloma inguinale and psittacosis. It should be pointed out, however, that the causative organisms for these infections are considered to be large viruses, if indeed they are to remain in the classification of viruses at all. They occupy a position somewhere between the small viruses and the rickettsiae. Included among the important viral infections in which aureomycin has been tried and proved of little or no value are the common cold, influenza and poliomyelitis, not to mention the plantar wart. Aureomycin will be found to be of little value in the treatment of variola, rubeola or herpes." The Rochester clinician goes on to tell us that "The infections of the blood stream and urinary tract in which aureomycin is most likely to prove of value include those owing to *Streptococcus faecalis*, *Aerobacter aerogenes* and *Escherichia coli*. In addition, aureomycin has proved of great value in the treatment of these infections owing to penicillin-resistant staphylococci. For example, Nichols and Needham have recently reported on their experience at the Clinic in which aureomycin proved life-saving in patients with bacteremia who otherwise would have failed to recover because of penicillin-resistance."

Herrell says that "Other than gastro-intestinal irritation following the oral administration of aureomycin, toxic reactions have been almost negligible."

It is fortunate indeed that aureomycin is proving to be highly efficacious in many conditions and that its toxicity and undesirable side-effects are so low. And Herrell is apparently correct when he states that

aureomycin is probably the most important development in antibiotic therapy since penicillin. The use of antibiotics is so recent and so many antibiotic agents have been and are being introduced that it is not easy for a practitioner always to keep adequately informed concerning them. Reports such as this one are of great help to physicians and they also serve to point out again the fact that medicine is always progressive.

MEETINGS

FOURTH CLINICAL SESSION AMERICAN MEDICAL ASSOCIATION

Cleveland, December 5-8

The Fourth Clinical Session of the American Medical Association, designed primarily for the general practitioner, will be held in Cleveland, December 5-8.

The scientific sessions and the scientific and technical exhibits will be presented in the Cleveland Municipal Auditorium. Meetings of the House of Delegates will be held in the Statler Hotel. These sessions of the body elected to govern the affairs of the A. M. A. are attracting more and more non-delegate physicians each year.

Outstanding clinical teachers with recognized ability as speakers will headline the scientific demonstrations. Actual cases will be presented and discussed. Diagnoses, treatment and preventive measures, as they fit into daily practice, will receive the greatest attention.

Each clinical session will be limited to an attendance of 100 physicians. These small groups will make it possible for the general practitioner to enter actively into the discussion and to inquire about his own cases. Leading men in each of the fields under discussion will be available to help with the problems presented.

In obstetrics, difficult cases of interest will be featured. Especially stressed will be the general subjects of breech deliveries, induction of labor, indications for cesarean section, obstetric analgesia and anesthesia, and hemorrhages.

Clinical discussions featuring actual pediatrics patients have been programmed. The care of premature infants, acute diarrhea in children, rheumatic fever, preventive medi-

cal measures, and psychiatric care for small children are among the interesting topics scheduled.

Because of the unusual interest displayed last year in the section devoted to management of heart cases, there will be a similar session this year. It will include discussions on hypertension, recent advances in drug therapy, including ACTH as it applies to heart disease, acute arterial occlusion and cardiac arrhythmias.

Of special interest will be discussions on Parkinsonism, the use of the electro-encephalograph, electric shock therapy and psychotherapy.

With more cases of fluid balance appearing because of the larger number of geriatric patients, there will be discussions on fluid replacement in shock, renal repairment, dehydration and other topics.

Of unusual interest will be the new studies and clinical histories involving traumatic surgery. This will include material on reconstructive surgery, emergency analgesia and emergency surgical measures.

Taken up in detail will be the management of postoperative or inoperable cancer patients. The use of analgesics and the effects of hormone and radiologic treatment will be discussed.

An excellent program has been arranged covering diabetes. This will include diagnosis, vascular complications, special consideration in pregnancy and surgery, and dietary problems.

Very timely will be the panel discussions and demonstrations on the diagnosis of poliomyelitis, the treatment of respiratory failure and the management of paralytic cases. There will be demonstrations of physical therapy and rehabilitation measures for poliomyelitis cases.

Papers covering practical problems in dermatology and syphilology will be presented. Deep fungus infections and industrial, allergic and contact dermatoses will be demonstrated and discussed. Emphasis will be put on the newest developments in syphilology.

New developments and refinements of older techniques will feature the discussions on anesthesiology. Spinal anesthesia, management of the surgical case, intravenous administration and other practical problems will be reviewed.

Outstanding speakers will discuss ulcers, jaundice, infectious hepatitis, cirrhosis and other gastro-intestinal diseases. Newest advances in medicine and the use of many newer drugs and their application to the general practice of medicine will be presented in another section. Of special interest will be the discussions on the use of antibiotics, hormones and antispasmodics.

Outstanding features of the scientific exhibits will be special demonstrations on fractures, diabetes, rheumatism and arthritis. Exhibits will be presented on cancer, pediatrics, chest diseases, surgical procedures and other subjects correlated with the clinical presentations.

Once again color television will take its place on the program. A schedule of surgery, clinical treatment and examination will be telecast from the Western Reserve School of Medicine to the auditorium. It will be sponsored by Smith, Kline & French Laboratories.

The annual General Practitioner Award has come to be regarded as one of medicine's highest honors and a definite step toward increasing the recognition of the family doctor. This year's selection will be made at the Cleveland meeting.

The steadily climbing registration of general practitioners at the clinical sessions and the comments of those participating indicate these meetings are valuable means of keeping abreast of developments in medicine. It is hoped that a record number of physicians will take advantage of the opportunity in December to attend. The program has been designed with that in mind.

**SOUTHERN MEDICAL
ASSOCIATION**

Forty-Fourth Annual Meeting

St. Louis, Missouri

Monday, Tuesday, Wednesday and Thursday

November 13-16, 1950

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

BY DEFAULT

W. A. Dozier, Jr.

Director of Public Relations

Each day the job seems to become more and more difficult. Two years ago there was one central theme which had to be taken care of, which matter was, of course, compulsory sickness insurance. It cannot be said now that such a plan is dead, and probably such a statement can never be made. However the pressure right at present is less because of the opposition the people have created after learning more about the proposed scheme and how it has worked when tried elsewhere.

Closely following the push for the complete scheme came the statement that proponents would get what they wanted even if they had to do it piecemeal—in other words the old Fabian technique. This increased the job to be done by a great amount. Scrutiny of each proposal had to be more careful; more and more attempts had to be analyzed, and motivation became a far more difficult undertaking. These necessities are still within the picture of the present situation.

Added to the above is a new factor that may have a great bearing on the outcome. That is the present international situation and the Korean War. Our attempts at going back to something of a normal peacetime existence with fewer and fewer governmental controls are being thwarted. People, and especially physicians, are again faced with the prospects of being uprooted and of being once more placed in the armed services. Our economy, which to so many minds has not been put on anything near a sound basis since the last war, is faced with new stresses and strains that may upset it even more than was experienced last time.

With all of this facing the individual members of the profession, not to mention a heavier case load due to the readmittance of certain physicians to the armed services, it is easy to understand that minds very

often are not on the matter of what is happening in Washington. However, what has been gained must not be lost by default. People who are pushing one certain idea may be expected to continue this push and to use, as in the past, every opportunity of furthering their aims. A time when everyone else is preoccupied is an excellent movement to push harder and harder for a certain goal. Under such circumstances one is more likely to be assured of success.

In all fairness the situation must be viewed in this light too. It probably will be more difficult to get some of the bills considered now because of the press of more urgent matters. But on this there is another factor to consider. Those who want the step taken toward more socialization are in Washington and are in a position to push more constantly. Water pressure can be built up by only one drop at a time. The same is true here.

It is hard to think that already overloaded minds and hours must find room for something more, but such is the case. Energies must be spread without diminishing the power placed on any point at present. This of course means more energy must be called up. Hard? Yes. But then it is necessary too if one does not want to lose by default.

Every community is entitled to safe water, food, and milk, and protection from unsafe disposal of wastes; to as safe an environment as we know how to provide including pure air; safe streets, homes, places of work, and places of education and recreation; to the best protection we know how to provide from the contagious diseases, including tuberculosis and the venereal diseases; access to good medical care and hospitalization when needed; to the best protection we know how to provide against the special hazards of maternity and infancy; to the best facilities we know how to provide for the healthy development of our children, including correction of crippling physical and mental defects; recognition and treatment of rheumatic fever and other heart disease, and to the knowledge and facilities necessary to prevent as many deaths as possible from cancer, heart disease, diabetes, and the other degenerative diseases.—William P. Shepard, M. D., *Nat. Tuberc. A. Bull.*, Oct., 1949.

WOMAN'S AUXILIARY

Mrs. J. G. Daves, Cullman, President

Dear Doctor:

Won't you please take your Journal home for your wife to read?

The reports of the County Presidents as given during the Convention in April, contained in this issue of the Journal, will be of real interest to every doctor and his wife in the State. An idea of the value of the work our organization is striving to do can be gotten from reading the reports.

These reports will inspire newly organized Auxiliaries, and will give those who have found no reason to date for an organization in their vicinity plenty of reasons for having one.

We are proud as can be of the twenty counties that have organized Auxiliaries, but we are not so proud that this number represents less than a third of the counties in the State. Sixty-seven County Medical Societies with only twenty Auxiliaries is not enough. We want to be, and should be one hundred per cent strong. There is so much we want to do, and can do, but only if we are united in our efforts.

We will sincerely thank you to take your Journal home, and if you are Boss at your house, and we know you are, insist upon your wife keeping up with the Auxiliary work. Thanks so very much.

REPORTS OF COUNTY AUXILIARIES

1950

Calhoun County

Mrs. M. S. Adams, President

The Auxiliary has 28 paid members. We have a luncheon meeting each quarter. Our programs have dealt with local health projects and national health legislation, with special emphasis on Auxiliary efforts in these fields. We were delighted to have our State President address us at one of our meetings. At another meeting we were entertained with a musical program.

We are still cooperating with the County Health Department in the use of a prenatal fund which was collected by county clubs and entrusted to us as treasurer.

Our members have been active through other organizations in drives for funds for such causes as tuberculosis, heart disease, Red Cross, Crippled Children's Clinic, and currently for a spastic children's clinic. The recent successful Heart Campaign was carried out under the sponsorship of this Auxiliary.

One of our members, Mrs. Gerald Woodruff, has addressed three civic organizations during the year on the subject of National Compulsory Health Insurance. Mrs. Woodruff has also given

literature on this vital subject to local P. T. A. groups and to the county health nurse.

We contributed this year to the Jane Todd Crawford Fund. We have 31 subscriptions to Today's Health, 12 of which have been placed as gifts by various members in schools, libraries, the nurses' home, and other public places.

Our Doctor's Day entertainment this year was unusually successful. On St. Patrick's Eve we held a covered dish supper at the spacious and hospitable home of Dr. and Mrs. Woodruff. Seventy people were present. The success of the supper was enhanced by the hilarious magician's show which followed, this entertainment being provided by three local young men.

We have had good press notices and received good publicity during the Heart Campaign, which we sponsored.

Colbert County

Mrs. R. D. Wright, President

There are 16 doctors' wives in the county eligible for membership. Last year the membership was 14; this year 15.

The Auxiliary meets quarterly with an average attendance of 10. Two programs were given by members: 1. The Research and Romance of Medicine, the material being taken from the State Medical Journal; and 2. Compulsory Health Insurance, taken from material published by the Public Relations Department.

There have been two guest speakers: one who showed colored slides and talked on her experiences in the Hawaiian Islands, and our State President, Mrs. W. J. Rosser, who gave a very interesting and informative talk. A dinner party was given by the Auxiliary members for their husbands on Doctor's Day.

The Auxiliary contributed \$5.00 to the Jane Todd Crawford Fund, and nine subscriptions to Today's Health were procured.

All meetings have been reported to the press.

Two members are active on health committees in other organizations, and all members have participated in volunteer hospital work, Red Cross, Community Chest, Girl Scouting, cancer control, and crippled children's work.

Cullman County

Mrs. J. C. Chambliss, President

It is with considerable pleasure that I present the following report:

We now have 21 members, which gives us 100 per cent membership. We meet in the homes of the members and are served our evening meal

on the same evening our doctors meet. Our programs have been most interesting to us, such as book reviews, parliamentary drills, reports on all conventions, articles from Today's Health, compulsory health insurance, current event topics and histories of Auxiliary works.

We contributed to the Jane Todd Crawford Fund, and flowers for many shut-ins, fruit cakes and boxes of food, groceries and cash donations for the needy, and 302 pounds of clothes, five and a half days were given to the Polio Drive, 3 days to the Community Chest, and 4 days to the Red Cross Drive. This should include cash donations to each organization.

The Auxiliary has procured 8 subscriptions to Today's Health and 12 to the Bulletin.

It has bought clothing for one student nurse, who would have been unable otherwise to go into training. We have a Student Nurse's Scholarship Fund, and now have one nurse at Highland Baptist Hospital, Birmingham.

We contributed to the Veterans Hospital, Tuscaloosa, and are having a ward party there the last of May. Also have contributed knitting needles, games, 10 decks of playing cards, and pencils to the therapeutic department.

We have a very stimulating and cooperative membership.

We honored our doctors with a dinner party, which included a skit and contests with prizes and games.

Dallas County

Mrs. J. P. Howell, President

The Woman's Auxiliary to the Dallas County Medical Society ends its second year having made steady progress. We are herewith making our first formal report. We were organized in March of 1948. Our membership is thirty. These include two members from Perry County and two from Wilcox County. We expect to add new members from Hale, Clarke and Marengo Counties next year.

We have included in our programs one on health education, one on the American Heart Association, and another on nurse education.

Our first Doctor's Day program was held on March 29, with about 45 in attendance. We had a banquet with humorous entertainment. Very favorable comments followed.

We have contributed to both the Lettie Daffin Perdue and Jane Todd Crawford Funds. We have made contributions to local groups as the American Red Cross and the March of Dimes.

We did not enter the contest of Today's Health but we sold 12 new subscriptions. Every doctor and every dentist in Selma is a subscriber to Today's Health for his patients' waiting room. We have two subscriptions to the Bulletin.

One of our members taught a Red Cross Home Nursing Course in a county high school.

Our projects are: 1. In cooperation with the local Dale Carnegie Speech Club, we have set

up a speaker's bureau. Four members of this group are prepared to present a program to local clubs on the National Compulsory Health Insurance issue. Mr. Dozier's office in Montgomery provided the material. We have invited all women and civic clubs to give this group a hearing. The response has been feeble. We hope more of them will use this service next year; and 2. We have shown a moving picture, Girls in White, to four high school groups. The girls' interest in this film was gratifying.

Our meetings have been held each third Tuesday of the month, with luncheon preceding our business session. Our vision of Auxiliary work is growing and we are looking forward to good years of service.

DeKalb County

Mrs. C. D. Killian, President

The Auxiliary to the DeKalb County Medical Society extends greetings to our State President, Mrs. W. J. Rosser, to the officers, chairmen and members. I am pleased to submit the following report:

Our Auxiliary, organized last August 12th with six members, now has a membership of twelve, a new member being added at our last meeting, an increase of six. Auxiliary meetings are held monthly on the fourth Friday. Most of them have been in the homes, with an average attendance of eight.

We were represented at the Board meeting in Birmingham September 8th. We also had the privilege of meeting with the Etowah Auxiliary the 20th of September at a luncheon to hear our State President, Mrs. W. J. Rosser, who was guest speaker. On November 14th at a luncheon meeting Mrs. J. C. Chambliss, State President of the Doctor's Day Committee, and Mrs. J. G. Daves, State President-Elect were guest speakers.

Programs have been interesting, designed to stimulate attendance, as well as being educational. Discussions on socialized medicine, objectives of the Woman's Auxiliary and the Constitution have been stressed. Literature on socialized medicine has been distributed to the P. T. A. and doctors' offices. Two talks, Health Education and Health Indicative of Good Citizenship, were presented to the P. T. A. of a colored school. The medical history of Alabama, public relations for county Auxiliaries, a pamphlet on the Jane Todd Crawford Memorial Plan and seven sketches from the lives of Drs. John A. Wyeth, Josiah Nott, George A. Ketchum, Claudius H. Mastin, Sr., William H. Sanders, J. T. Searcy, and William Crawford Gorgas were given at our program meetings.

We gave \$5.00 to the Crawford Memorial Fund; two subscriptions to Today's Health, one for our Auxiliary and one for the colored school P. T. A.; and one subscription for the Bulletin.

Doctor's Day was observed by presenting each doctor a red carnation. There were fourteen

of these flowers distributed in the county.

Every meeting has been reported to our two local papers.

Escambia County

Mrs. George T. Perry, President

Preliminary plans for the organization of our Auxiliary were made in July 1949 in Brewton. Mrs. Gordon Daves, President-Elect of the State organization met with the ladies and discussed plans for the new Auxiliary. It was decided that the meetings would be held at the same time and place the County Medical Society meets. Our initial meeting was held on August 3, 1949.

During the meetings of August, September and October, plans were made for entertaining the Southwestern Division of the Association to be held in Atmore on October 27, at the American Legion Hall.

The Auxiliary ladies registered the doctors as they came in, pinning a red carnation on each to signify he was a visiting doctor. The visiting wives were pinned with a camellia furnished by the wife of one of the druggists. During the meeting, Mrs. William J. Rosser, State President, Mrs. Daves and Mrs. Perry obtained approximately 15 new members-at-large for the Auxiliary. The meeting was a delightful success, culminating with a lovely lawn party at the home of Mr. and Mrs. Marshall Patterson, in Atmore.

At the January meeting Mr. W. A. Dozier, Director of Public Relations of the State Medical Association, was introduced by Mrs. DeShazo, Chairman of Programs, and he discussed The Auxiliary's Public Relations.

The March meeting was held in the home of Mrs. John Turberville of Century, Fla., at which time the Auxiliary was shown a movie, White Battalions, which is sponsored by the American Medical Association.

It was voted that the Auxiliary's colors be red and white, and its flowers the camellia and the rose.

Etowah County

Mrs. J. O. Morgan, President

The membership of the Auxiliary is forty-seven. Regular monthly luncheon meetings have been held. The attendance has been excellent. We have attempted to carry on activities which would be helpful to our husbands and the Medical Association. Telegrams were sent Senators Hill and Sparkman asking their support of Resolution No. 147. Ten dollars was sent to the Jane Todd Crawford Memorial Fund. This was twice the amount donated in previous years.

The programs at our regular meetings have been varied. In September the meeting was held at the Gadsden Country Club. Mrs. W. J. Rosser, our State President, was guest speaker. She gave a most excellent and helpful talk. In October

Dr. J. O. Morgan spoke to our organization on Blue Cross and Blue Shield insurance. He stressed the value of voluntary health insurance. We were fortunate in having Mrs. Lillian Meade, State Commander of the Alabama Cancer Society, with us in November. She explained the work of the Cancer Society in a most able manner. Bird and music programs and a book review were features of other meetings. We were fortunate in having, as guest speaker at one of our meetings, Mrs. Spaulding, representing the American Red Cross.

We celebrated Doctor's Day, on March 23, with a dinner party for our husbands. Mrs. O. A. Miller gave us a very nice show and our State President, Mrs. Rosser, again honored us with her presence and a good talk. Mrs. Rosser has been a great inspiration to all of us and we love and thank her for all the fine things she has done.

Jefferson County

Bessemer

Mrs. W. N. Payne, President

I wish to give the annual report of the Bessemer Auxiliary for 1949-50. Three new members were enrolled at the beginning of the year, making a total membership of thirty.

The officers of this organization for the ensuing year are to be a president, a president-elect, a secretary, a treasurer, an historian and a reporter. The annual dues will be five dollars (\$5.00), payable semiannually. The budget for the year included membership in the Health Center, \$1.00; Community Chest \$5.00; Christmas Seals \$5.00; Social Hygiene Association \$5.00; March of Dimes \$5.00; Junior Auxiliary for the community Christmas tree \$5.00; for the Princess sponsored in the Bessemer Christmas Carnival \$10.00; Red Cross \$5.00; Jane Todd Crawford \$2.00; and Lettie Daffin Perdue Fund \$2.00.

The Auxiliary had 1000 postal cards mimeographed to be sent to Senators and Congressmen urging them to oppose socialized medicine.

The promotion of Today's Health (Hygeia) was accomplished by placing copies in the Health Center, Public Library, Bessemer High School, and the offices of our husbands. We are responsible for 25 subscriptions this year.

We have had most interesting planned programs for each month of the year with spot messages each month about the various phases of Auxiliary work.

Doctor's Day, March 30th, was emphasized by special greeting cards mailed to all doctors in Bessemer.

The public relations meeting, planned annually for April, was a tea at the First Methodist Church with a most interesting message about the Visiting Nurses' Association, and Maternal Welfare. All Federated Club Presidents and Presidents of P. T. A.'s were given special invitations. Each member invited ten guests. Ap-

proximately two-hundred women enjoyed this occasion.

The May meeting is our annual picnic for doctors and their families.

The objectives carried out by this organization are to promote friendliness and understanding among doctors and their families; to encourage public health measures, and to serve the community in which we live.

Jefferson County
Birmingham

Mrs. Curtis Green, President

During the year 1949-50 a great deal was accomplished by the Auxiliary. At Christmas time the Project Committee sent large boxes of toys to the Partlow State School in Tuscaloosa. The Scholarship Fund for medical training has \$2000.00 out on loan at the present time. One nursing scholarship was requested and granted. At present \$400.52 is available for nurse scholarships.

We have thirty-five subscriptions to Today's Health. We contributed to the Jane Todd Crawford Scholarship Fund, the Red Cross, Girls' Club and the Tuberculosis Iron Lung Fund.

We have fifteen members doing volunteer health work through other organizations, including March of Dimes, Cancer Drive, Red Cross, Maternal Welfare Association of Alabama, P. T. A., Jefferson-Hillman Hospital Auxiliary, Community Chest and the Alabama Heart Association.

On March 30th we honored our doctors by placing baskets of red carnations in all the Birmingham hospitals.

I have presided at all the luncheon meetings from October through April which have been held the first Tuesday of each month at the Church of the Advent Parish House. Our average attendance was seventy. We have had outstanding speakers at each meeting.

We have the distinct privilege of having one of our own members, Mrs. William J. Rosser, State President, to install the incoming officers for the new year 1950-51.

All meetings have been published in the newspapers.

Our membership to date is 150.

Madison County

Mrs. John W. Evans, President

The Woman's Auxiliary to the Madison County Medical Society is composed of thirty-two members. Our meetings are held the second Wednesday of each month, at which time the average attendance is twenty-five. These meetings consist of dinner and business session followed by a program. This year all programs have been educational. Six of these were conducted by outside speakers while three were presented by Auxiliary members.

All of our members are active workers in

various types of women's organizations, P. T. A., Business and Professional Women's Club and other civic and social groups. During this year, we, as a group, assisted the Blood Bank, donated and served nourishment to the donors, attended and served with the two Crippled Children's Clinics; and were also represented by a delegate to the Madison County Health and Welfare Council.

The Auxiliary has seriously studied proposed and pending health legislation. In November we were addressed by Mrs. W. J. Rosser, our State President on this subject, and again in February by State Representative Carl Morring, Jr.

Throughout this term we have generously supported and contributed to the Red Cross, Heart Association, Community Chest, cancer control, March of Dimes and a Christmas party for the veterans at Tuscaloosa.

In addition to our regular business meetings, we have entertained our doctor husbands in the summer with a barbecue and again with an Old West Party on Doctor's Day. These and all our meetings have been reported by the local press, especially our Doctor's Day event which was given wide coverage.

The Medical Society regards us as a cooperative body to assist it in any endeavor, whereby we may promote understanding and forward its aims.

Mobile County

Mrs. Mack J. Roberts, President

I beg to submit the following report of the activities of the Woman's Auxiliary, Mobile County Medical Society, for the year 1949-50.

I have presided and held 4 Executive Board meetings and have presided at all regular (quarterly) meetings of the Auxiliary.

We added 15 new members this year, lost one member, Mrs. N. S. Gay by death, and have a membership of 120 members.

Our programs have been most interesting and educational and, in addition, we have had short musical programs at three meetings. At our first meeting a history of our Auxiliary was given by one of the members, Mrs. Jack Hays. Our next meeting was in January and was against socialized medicine. A resume of the National Health Bill was given by James May, an attorney, and this was followed by a discussion centering around the application of the Health Bill in Great Britain. This was conducted by Mrs. P. Grey Cain (a former Britisher) who has recently returned from a trip to England. The third meeting was in celebration of Doctor's Day, the lives of three great Alabama physicians being presented—Dr. Josiah Nott by Mrs. M. J. Roberts; Dr. Marion Sims, by Mrs. J. C. Hope, Jr., and Mrs. O. M. Otts, Jr.; and Dr. Seale Harris by Mrs. S. S. Eichold. Dr. Harris was a guest at this meeting.

All of the standing committees have been appointed and have carried out their duties, co-

operating to the fullest extent, and I thank all of them.

The Auxiliary has welcomed as visitors at all meetings the wives of the doctors of the United States Marine Hospital. The Auxiliary had as its guests at the January meeting (which was devoted to the National Health Bill) the members of the Dental Auxiliary.

Our philanthropies this year have been as follows:

Lettie Daffin Perdue Scholarship Fund ...	\$10.00
Jane Todd Crawford Memorial	20.00
Cancer Control	10.00
Today's Health (16 subscriptions)	18.00
	<hr/>
	\$58.00

The Auxiliary has continued its fight against National Health Insurance. During the summer an interview was arranged between a British woman doctor (Dr. Aileen Dring, who was stationed on a boat at that time in port) and the press. She felt that the program in Great Britain was not satisfactory, and the press handled the interview masterfully.

The Auxiliary was most active against the President's Reorganization Plan No. 1 and was responsible for 45 or more sets of telegrams to the two Senators and our Congressman. We assisted the Mobile County Medical Society in arranging a banquet December 9, 1949, attended by doctors, dentists, druggists, prominent officials and all the Auxiliaries, and at which Senator Lister Hill and Congressman Frank Boykin spoke and were thanked for their assistance in defeating the President's Reorganization Plan.

Our Auxiliary furnished a speaker, Mrs. J. U. Reaves, to speak against the National Health Bill before a large Sunday School class (100). For four Sundays this class studied health needs (we furnished their supplementary material), and our speaker followed one who spoke for the bill.

Our radio chairman arranged an excellent program March 20, 1950 over WKRG. Mr. George Denniston, President of the American National Bank, spoke against the National Health Bill and against a welfare state. Radio Station WABB reported the celebration of Doctor's Day by our Auxiliary, quoting Dr. Seale Harris, who had been honored and also a guest.

This has been a most enjoyable year. I have thoroughly enjoyed working with the State Officers and County Officers and with every member of the Auxiliary. I thank each and every one of you.

Montgomery County

Mrs. H. L. Rosen, President

The Woman's Auxiliary to the Montgomery County Medical Society is very proud to have reached a membership of ninety-five in the little over two years since its organization. This is an increase of eleven members over last year's membership of eighty-four. One hundred nine wives

are eligible for membership. We lost two of last year's members, one of them by death, so we really have gained thirteen new members in our Auxiliary this year.

We hold luncheon meetings on the third Friday of each of the months from October through May, omitting December. This year we have held two extra meetings. One of them was held in December, at which time the entire meeting was turned over to the Legislative Committee. The other extra meeting was held March 9th in honor of Dr. W. W. Bauer, Editor of Today's Health, whose visit south we had the honor of sponsoring. Our meetings have been well attended with an average of fifty-six present, counting Auxiliary guests and visitors. This year we have invited wives of doctors stationed at the nearby Air Fields and wives of doctors from the Veterans Hospital to attend our meetings, even if they did not wish to become members. They have appreciated and taken advantage of this invitation. We have also kept in touch with near by members-at-large, urging them to attend our meetings. One of the members-at-large has been one of our best supporters.

We are very proud to have brought Dr. W. W. Bauer, mentioned above, into Alabama on a speaking tour that included Montgomery, Birmingham, Tuscaloosa, and Bessemer. He spoke in Montgomery before the Montgomery County Medical Society, Sidney Lanier High School, Junior Chamber of Commerce, Woman's Auxiliary to the Montgomery County Medical Society, over the radio, and before representatives from the P. T. A. Council and many outstanding women's clubs. We feel that we did good public relations work in bringing so outstanding a man in the medical world to the community.

Our programs have been most educational and have dealt mainly with health subjects. We have had as our speakers, besides Dr. W. W. Bauer, Mrs. W. J. Rosser, our State President; Mr. W. A. Dozier, Jr., Director of Public Relations of the State Medical Association; Dr. T. C. Marrs, founder of the hospital for spastic children; Mrs. Peter Vredenburg, Secretary of the National Democratic Committee; Dr. Edgar G. Givhan, Jr., President-Elect of the Alabama Heart Association; Dr. Paul Mertins, President of Montgomery County Medical Society; Mrs. Lillian G. Meade, Director of the Alabama Division of the American Cancer Society; and Mrs. Thomas F. Parker, instructor in the University of Alabama's Extension Service.

Our main project for the year was a Legislative Study Course held for thirty minutes after each meeting, except the December meeting, which was devoted entirely to the study course. Outside of the first session at which time Mr. Dozier presented Senate Bill 1679, all meetings have been completely conducted by different members of the Auxiliary. We are becoming an informed membership on controversial health issues. We are going forward with groundwork for resolutions against compulsory sickness insurance. We are now ready to approach different

clubs and organizations to ask their aid in this project.

Our Chairman of Today's Health is striving to get this excellent magazine in every doctor's and dentist's office in the city. We have now one hundred and seven subscriptions, which is a nice increase over last year's eighty-one.

We have, through profit on sales of Today's Health to doctors and dentists, established a \$100.00 loan scholarship to put a deserving young lady into nurse training. We now have a lovely young girl as the first recipient. We already have our money ready for another girl to use this fall, a girl who could not go into nursing otherwise.

Our Auxiliary took charge of the distribution and the servicing of the plastic hearts for the Heart Campaign in Montgomery during the month of February. This was handled very well by my able Heart Chairman and her Committee. It was a big assignment.

One of our most important jobs will take place on April 26th at the end of the Cancer Drive. At this time our Auxiliary will once again be responsible for Coffee Day in restaurants in Montgomery. We are proud to take part in this vital cancer work.

We observed Doctor's Day by personally distributing a red carnation to each doctor in the County Medical Society.

We have joined the Council for the Coordination of Community Services in order to work better with other organizations in the city for the improvement of health conditions. We were asked to be represented at the Brotherhood Luncheon during Brotherhood Week. We were also asked by the Superintendent of the Montgomery City Schools to meet and help plan American Education Week.

At the first Public Relations Conference of the State Medical Association held October 9th in Montgomery, we were honored by having our President speak for the Auxiliary.

We have had fine publicity in the local papers. They have been most cooperative in covering all of our activities. Our organization has been written up in several issues of the Alabama Medical Journal.

We have from time to time at our meetings distributed pamphlets furnished by the American Medical Association.

Our organization is young, and our County Medical Society does not yet realize our great potentialities for service to it and to the community. We await the day when they will call upon us, but, in the meantime, they are beginning to feel our presence by our achievements.

We feel we are completing a very active and successful year. The President had the most able and cooperative corps of officers and chairmen that could be desired, and a very stimulating and cooperative membership.

Morgan County

Mrs. John M. Chenault, President

The Morgan County Auxiliary has nineteen members out of a possible twenty-seven doctors'

wives eligible for membership. This is an increase of four members over the previous year.

For the first time, meetings have been held monthly during this year, and this has been most successful in increasing interest in the Auxiliary. Average attendance at regular meetings has been fifteen. Five meetings have featured educational programs, three were predominantly social in nature, and there was one business meeting.

We were fortunate in having our State President, Mrs. Rosser, with us for our February meeting, and she gave us a great deal of information and inspiration for the work of the Auxiliary. Two programs were given by members in the form of panel discussions on public relations, medical ethics, health and medical care in Alabama, and compulsory health insurance. Information for these discussions was taken from the material sent by the Public Relations office under the Auxiliary's Personal Education Plan.

The other programs of an educational nature included an illustrated lecture on Cancer of the Cervix given by Dr. C. S. McMurray of Nashville at a joint meeting of the County Medical Society and the Auxiliary, and a talk on the need for nurses by Mrs. Ruth Driver, Superintendent of Decatur General Hospital.

Nine members of our Auxiliary are active in volunteer health work. Through efforts of some of our members there is a movement underway in Hartselle to have chest x-rays taken of all club women and their families during this year. Several members have taken part in health education programs in other organizations. For the second consecutive year, we have furnished a first aid graduate for the Girl Scout Day Camp, this being an annual project. Also for the second year, we have participated in the city-wide beautification and clean-up campaign.

During the past year our members have continued to keep themselves informed on health legislation, especially on that concerning compulsory health insurance. Speakers on the subject have been furnished for two P. T. A.'s and three Federated Clubs, and we have distributed to women more than 350 pamphlets on socialized medicine. Two of our members assisted in a series of radio programs on the subject which was presented over a local station by the County Medical Society.

Through the efforts of our Today's Health chairman, each school library in the county has a subscription to the magazine and the Auxiliary has twenty-two subscriptions to its credit.

Social activities in addition to our regular meetings included a party in September for members of the Medical Society and their wives. This took the form of a covered-dish dinner at the home of one of our members, and was such a success that a similar affair was included in the program for Doctor's Day, which we observed on March 27th. Another feature of the day was the presentation during the morning of a red carnation to each member of the Society. Two other enjoyable social events were the dinner for Mrs. Rosser and the Christmas party, both of these for members only.

All regular meetings and projects of the Auxiliary have had full coverage in the local newspaper, with announcements preceding the event and full accounts afterward. The publicity in connection with the recent Doctor's Day was especially good, and it included an editorial, a front-page picture and feature story on the preceding Sunday, and pictures taken at the dinner, in addition to the regular announcements and write-up.

All members read the Auxiliary section of the State Medical Journal and we have five subscribers to the national Bulletin. We contributed to the Jane Todd Crawford Memorial Fund.

As has been the case ever since the organization of the Morgan County Auxiliary, we have had wonderful cooperation from the Medical Society. Its members have been interested in all phases of our work and have helped us at every turn, just as we have been interested in what they are doing and have tried to help them whenever possible. We feel that we have had an excellent year and with the help of the state officers and chairmen, and the continued interest of the Medical Society, we expect to go even further toward becoming an efficient and effective Auxiliary in the year to come.

Talladega County

Mrs. Robert Stock, President

The Auxiliary was organized last April just before the State Meeting, with eight members. During the year this number has been doubled, making the membership sixteen out of a possible twenty-six. Meetings are held once each month at the homes of members and usually begin as an informal tea, after which business is disposed of, followed by the program. The object of all programs this year was to inform the members themselves regarding the problems of the medical profession on a national as well as local level. Subjects were as follows: Understanding the Work of Public Relations; National, State and Local Health Legislation; The Twelve Point A. M. A. Program; Acceptable Methods of Voluntary Insurance; A. M. A.'s National Education Campaign, and the South's Health. At all of these meetings members prepared and gave the programs. Two social meetings were held to which the doctors were invited: a Doctor's Day picnic and a dinner party at Christmas.

The greatest health need in Talladega County at present is educational and work through the schools and P. T. A., our greatest opportunity in this field. Aid has been offered to the County Health Department, and the Auxiliary stands in readiness to help whenever called upon.

The Chairman of Legislation has cooperated with the County Medical Society in doing work suggested by it. All members subscribed to the national Bulletin. The Society has been most encouraging and co-operative from the first but it is just beginning to realize that it has a source of help whenever and wherever help is needed.

Tuscaloosa County

Mrs. C. E. Abbott, Jr., President

The Tuscaloosa County Auxiliary with 29 paid members had four meetings the past year.

Mrs. Harvey Searcy gave a lovely tea in January at the Country Club to welcome the new doctors' wives.

The Auxiliary helped with the Blood Bank at the Druid City Hospital and assisted at the Crippled Children's Clinic. The Auxiliary also assisted in the meeting of the Northwestern Division of the Association held at Bryce Hospital, February 22, 1950.

Doctor's Day will be celebrated in the form of a barbecue during the month of May and will be held at Bryce Hospital.

The new officers elected for 1950-51 are: President—Mrs. C. E. Abbott, Jr.; Vice-President—Mrs. Sidney Tarwater; Secretary—Mrs. Henry Herrod; and Treasurer—Mrs. Albert Jackson.

Walker County

Mrs. T. J. Payne, Jr., President

Eighteen wives out of a possible twenty-five are identified with the Auxiliary. One member was lost and one gained during the current year.

Meetings are held monthly and consist of a dinner with the doctors, followed by separate meetings. Average attendance is twelve.

Programs have been educational and have been given by Auxiliary members. General discussions have followed each program. Most of the material used has been that sent out by the State Program Committee.

Members have been urged to present programs on the Compulsory Health Insurance Bill to respective clubs and organizations. Several have done so.

Walker and Cullman County Auxiliaries have had three joint meetings during the year, and while these have been social gatherings principally the Walker County Auxiliary has been enlightened and inspired by this association.

Both announcements and reports of meetings have appeared regularly in local newspapers.

Philanthropic work has consisted mainly in buying gifts for and cheering the patients at the Old People's Home.

There have been seven subscriptions to Today's Health, an increase of six over last year, and two subscriptions to the Bulletin.

An A average in premedical college work is not required for admission to medical schools, according to Dr. Donald G. Anderson of Chicago, Secretary of the American Medical Association's Council on Medical Education and Hospitals.

A recent report to the council states that 10 per cent of students admitted to medical schools in the United States during the academic year 1949-1950 had no better than a C plus scholastic average in premedical college work. Many others, Dr. Anderson pointed out, had B averages.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

BLASTING CAP DANGERS

Youngsters have a peculiar fondness for hammers and fire. Parents have to keep on the lookout to prevent them from smashing youthful fingers and feet and getting too close to open fireplaces, wash pot fires, etc. Tragedies of either kind are often loaded with heartbreak.

But there is another kind of tragedy in which fire and hammers (or similar utensils) play a part. You probably seldom give it a thought. When you do, you very likely do not think it is anything for you to be concerned about. Nevertheless, it is closer to you than you think. There is greater danger of its killing or injuring someone dear to you than you probably have any idea. I refer to blasting caps.

Those in a position to know say that on an average ten or more youngsters are injured every month in this way in the United States. In some years the number has been considerably higher. The injuries that have resulted from accidents of this kind covered a pretty wide field, as you may well imagine. They involve the loss of fingers, whole hands, arms and even the glorious privilege of sight. Some of them have proved fatal. The injured cover a wide age range. But, for the most part, they have been between six and 15. (What a time in life to suffer a lifelong physical handicap!)

Those injuries, which have afflicted Alabama youngsters along with children in other states, bring us face to face with some sobering questions: How do youngsters manage to get their hands on such dangerous articles? What are parents—Alabama parents, along with others—doing to eliminate that hazard, or at least keep it at a minimum? How can children be shown the seriousness of this danger and given a fear of it which will keep them as far from blasting caps as they can get?

Those who make blasting caps and other explosives are fully alive to this danger. Don't think for a moment that they aren't. They are eager to keep those dangerous caps in the hands of those who know how to handle them and out of the hands of children. They are saddened by news that another youngster has been disfigured for life by a premature or unintended explosion. They feel an obligation to prevent every tragedy of this kind they can. In the discharge of this obligation, they have been carrying on an intensive campaign of safety education in this narrow, but important, field. The agency to which they have delegated this duty is the Institute of Makers of Explosives. The State Department of Health is glad to cooperate with that group in calling attention to this danger.

All of us, or at least most of us, have a general idea as to what blasting caps are. Anyone who has helped in ditching operations or been around while such operations were being carried on has at least seen how they work and heard the explosions. But let us see exactly what they are and how they do what they do.

A blasting cap, also known as a dynamite cap, consists of a small metal cylinder. It is about as long as an ordinary match. Its circumference is about like that of an ordinary pencil. Its main contents are a sensitive and quite strong explosive. While it has considerable—and dangerous—explosive force itself, it is used primarily to set off other and more powerful explosives. The blasting cap has many uses. But you will find it most often in operations in and around coal mines, quarries, new ground cleaning and road building.

Blasting caps are relatively harmless as long as they are left alone. But these harmless-looking pencil-shaped articles become powerhouses of explosiveness when they are detonated. That is done in one of three ways: by fire, electricity or shock. Two types of caps are in general use, essentially similar but different in the manner of detonation. One has a place in the end for the

insertion of a fuse. After that is done, a lighted match is applied to the other end of the fuse. The fuse may be short or long, depending upon how much time the farmer or workman thinks he will need to get away to a place of safety. The cap detonates when that fuse leads the fire to the explosive. The other type of cap is known as an electric blasting cap. It has two wires extending from one end. Inside the cap those two parallel wires are connected by another wire which becomes intensely hot when electricity is passed through it. That thin "hot" wire is surrounded by the explosive charge. When those outside wires are attached to a source of electricity—dry batteries, a storage battery or, in a few cases, a regular electrical outlet—the electricity surges through them, heats that thin wire imbedded in the explosive charge and sets off the cap.

Naturally, few youngsters or older people either are hurt by these caps used in the way indicated. Such injuries are possible, of course. For workmen may miscalculate as to the length of the fuse needed to insure their getting away to a safe distance before a blast occurs. There are other possibilities and dangers. However, they are normally not serious enough to cause much concern, provided reasonable care is exercised.

But that other means of setting off dynamite caps, or blasting caps, has definite and serious dangers. I refer, of course, to shock. If a youngster gets his hand on a hammer and a blasting cap at the same time, his very life may be in danger. He may also cause it to explode in other ways. He may throw it against the pavement or against a rock along the side of the road. He may pick at it with his pocket knife. It is well to keep in mind this bit of advice from the Institute of Makers of Explosives: "It is very important to remember that these caps are quite sensitive—they have to be to do their job of exploding dynamite charges—and handling by an inexperienced person is bound to be dangerous. Children, particularly, should not even touch them."

You may be interested to know the details of a few accidents of this kind. They may give you a better idea of what happens, and the results, when a dynamite cap goes off when it is not supposed to.

One of these accidents happened not so

very far from here, at least in this state. A nine-year-old boy at Randolph, Bibb County, found a box of caps in the barn and started playing with them. On some kind of impulse, he threw one into an open fireplace. The resulting explosion cost him a hand. He also suffered a chest injury and damage to an eye.

On the day before this tragic mishap occurred to that Alabama youngster, a similar accident struck at another child, also nine years old, in Illinois. He too was playing with a blasting cap. It exploded, and he lost three fingers. And, during that same week, another Illinois boy was hurt when he mistook a blasting cap for an exploded rifle cartridge and started hammering it. His left eye was badly injured. So seriously was it damaged in fact that it had to be removed.

Those two last-mentioned accidents in a single state in less than a week were not altogether without good. For they roused the people and certain officials to the need to do something about this danger. As a result, the Illinois state mine inspector and the superintendent of a local mine rescue station volunteered their services in the staging of demonstrations to impress this danger upon children. Schools were used, and some excellent accident education work was done.

There is a strong temptation to pick up anything like a blasting cap and examine it. That is true of most of us. It is particularly true of youngsters. But that is a temptation which should be strongly resisted. Whenever a child finds a blasting cap, he should leave it severely alone, not touching it at all. But he should report what he has found to an adult. That might be a parent, his teacher, a policeman or a workman. It goes without saying that the adult should handle it with extreme care. Every precaution should be used to prevent it from being dropped. It should never be kept in the pocket with keys, coins or other articles that could cause a detonation.

As already pointed out, the firms that manufacture blasting caps are doing everything they can to keep them out of the hands of youngsters. But there is a limit to what they can do. For one thing, those that fall into unsafe hands do not do so while they

are in their possession. It is after they have been sold to miners, quarrymen, roadbuilders and others who actually use them that they become a menace to boys and girls. But the manufacturers feel that they have a continuing responsibility to prevent accidents of that kind from happening. To discharge that responsibility, in part at least, they have been doing whatever they could to see that blasting cap users are as careful with them as they would be themselves. They are urging them, for example, to keep these dangerous explosives under lock and key when not in use. They ask them to keep a careful check on the number they have on hand and on those they use. Unfortunately, that advice is not always followed. Farmers, workmen and others become careless. They fail to realize the full seriousness of this danger. So they leave them in unlocked buildings. They do not check up on those they have for months at a time. Youngsters, with the usual consuming curiosity of a child, and also with a child's inability to see danger clearly, find them lying about here and there. They come across them in such places as barns, woodsheds, attics and cellars.

With blasting caps within reach of many children, the Institute of Makers of Explosives has carried its campaign of safety education farther. It has sought to arouse a fear of this danger among youngsters themselves. It has been urging them to leave blasting caps alone, wherever they may find them. In this educational campaign, they have enlisted the cooperation of a number of organizations devoted to the nation's youth. Among them are the Boy Scouts and the Girl Scouts. School officials have likewise helped. Organizations devoted to health and safety have also done their part. As already indicated, the Alabama State Department of Health is glad to participate.

This campaign takes a number of forms. But it consists mainly of the distribution of many thousands of leaflets and posters. All of these have one central theme: the danger of playing with blasting caps. They are sent to county and city schools in every state of the Union. They go also to county farm agents, health departments and other agencies and organizations that might be helpful in saving a youngster's eye, hand, finger or life. Any group not already par-

ticipating and wishing to have a part in this program will be gladly welcomed and supplied with materials.

One of the most effective instruments in this program of safety education is one which the State Department of Health has also used with considerable success. That is the motion picture film. The Institute of Makers of Explosives has produced a film with the highly appropriate title "Blasting Cap." In both sound and color, it shows dramatically the dangers inherent in blasting caps in unskilled hands. This film is said to have been received with considerable enthusiasm, especially by school children. In a single recent year—the most recent of which the State Health Department has any knowledge—it was shown more than 2,000 times. Its total audience during that 12-month period is said to have been well up in the hundreds of thousands. More than a hundred prints of this film have been made for loaning to institutions, groups and organizations wishing to show it. There is no charge.

The Institute of Makers of Explosives has also used the radio pretty extensively to get its safety measures across. And they have found the broadcasting stations fully cooperative.

Let me read you a message from the Institute, to youngsters and others, which partly repeats but also emphasizes this danger. It says:

"Boys and girls can help by remembering what a blasting cap is—a small metal tube about the length of a match and as big as a pencil—and, if they see one, by leaving it alone and reporting it to an adult. They should see that their friends also understand what a terribly dangerous thing a blasting cap is. Parents and teachers can help by making sure that their children and pupils are taught to recognize and avoid blasting caps . . . By making every effort to see that children realize that a blasting cap is an explosive weapon as dangerous as a hand grenade, we can save from mutilation and death the hundred or more boys and girls who, each year, are injured through ignorance."

The saving of lives is a heavy responsibility. The prevention of crippling and deformity is a task that taxes all our facilities. You may consider blasting cap safety education a

small part of that joint duty. But, remember, every life lost, every eye made sightless, every finger or hand damaged into uselessness is a supreme tragedy to the victim and his family. Here, then, is an opportunity to help spare a considerable number of people great unhappiness. All we need to do is to be careful and teach others to be.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

JULY 1950

Examinations for diphtheria bacilli and Vincent's	218
Agglutination tests (typhoid, Brill's and undulant fever)	1,488
Typhoid cultures (blood, feces and urine)	610
Examinations for malaria	914
Examinations for intestinal parasites	3,401
Serologic tests for syphilis (blood and spinal fluid)	23,267
Darkfield examinations	6
Examinations for gonococci	1,687
Examinations for tubercle bacilli	2,933
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	102
Water examinations	1,777
Milk and dairy products examinations	3,587
Miscellaneous	264
Total	40,255

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1950

	June	July	E. E.* July
Typhoid	4	15	16
Undulant fever	5	6	8
Meningitis	8	5	10
Scarlet fever	22	15	29
Whooping cough	162	116	98
Diphtheria	11	10	16
Tetanus	8	1	4
Tuberculosis	221	251	244
Tularemia	2	0	1
Amebic dysentery	3	2	1
Malaria	18	11	296
Influenza	34	15	27
Smallpox	0	0	0
Measles	174	89	124
Poliomyelitis	13	74	33
Encephalitis	0	2	1
Chickenpox	150	11	15
Typhus	15	19	36
Mumps	168	60	62
Cancer	342	367	261
Pellagra	3	4	5
Pneumonia	131	117	107
Syphilis	627	1384	1158
Chancroid	9	14	14
Gonorrhea	354	464	613
Rabies—Human cases	0	0	0
Positive animal heads	26	35	0

As reported by physicians and including deaths not reported as cases.
*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

FOOD POISONING PROBLEM IN FOOD ESTABLISHMENTS

Contributed by

U. D. Franklin, B. S., M. S.
Chief Sanitarian

The problem of food poisoning is a constant source of trouble confronting the average establishment in which food is prepared and served.

There are certain types of foods known to be most likely responsible for outbreaks of food poisoning and food infection. Those most frequently incriminated are: (a) potato salad, ham salad, chicken salad, and other similar foods in which certain of the ingredients are first cooked, then handled, and finally placed in the refrigerator and kept for several hours at an unsuitable temperature; (b) non-acid puddings and non-acid cream-filled pies which have undoubtedly been adequately baked, then contaminated by improper handling and stored for sometime, or until served, at an incubation temperature; (c) turkeys and other fowl stuffed and inadequately baked, with or without a period of insufficient refrigeration before or after baking; (d) meat loaf, ham and other meats which are baked either adequately or inadequately and then sliced, resulting in a considerable amount of handling and usually without the proper refrigeration; and (e) acid drinks prepared in zinc-coated containers.

The problem of food poisoning appears largely to center around the control of the Staphylococcus, Streptococcus and Salmonella organisms. This is particularly true of many unrefrigerated foods in warm weather. If foods containing these organisms are held without adequate refrigeration for a period of several hours, thereby permitting bacterial development, there may be developed toxins as well as numerous pathogenic organisms.

Factors to which attention should be devoted in this connection are: (1) Non-acid foods are conducive to the growth of certain types of organisms and the production of toxins which may be responsible for food poisoning and food infection. (2) Several hours may elapse before the center portions of some foods placed in a refrigerator reach

refrigeration temperature, thereby allowing adequate time for the production of both high bacteria counts and large amounts of toxin. (3) In a non-acid food, cooking is less effective for sterilizing than would be the case in an acid medium. (4) When a high bacterial count is built up by incubation of the contaminated food, it requires a longer time or a higher temperature or both to destroy completely the microorganisms present. (5) The bacteria may be partially or completely destroyed, yet toxins developed in the food may not be entirely eliminated by the cooking process.

The transportation of heavily contaminated, unrefrigerated, non-acid foods from one city to another, requiring considerable time, is a dangerous procedure. Baked pastries likely to cause food poisoning should, of course, be thoroughly baked, then protected from contamination through proper handling or otherwise and kept under adequate refrigeration at all times, even in the delivery truck. Even with these precautions sporadic outbreaks of food poisoning may occur.

Food handlers have within their domain the following control factors: (1) prevent excessive handling or other contamination of foods initially by maintaining personal cleanliness, use of food forceps, forks, etc., and by adequate protection of foods; (2) shorten the time between preparation and cooking and between cooking and serving, or between preparation and serving for foods handled after cooking; (3) adequately cook foods (including left-overs); and (4) adequately refrigerate (just above freezing) all foods which are likely to be responsible for food poisoning.

Changes in physical properties cannot be relied upon for detecting poisonous food. Knowing the exact history of the food is the most important one factor in controlling food poisoning, and in deciding whether a particular food is safe for consumption. Only the food handler can be sure of this and he must be thoroughly trained and competent.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR MAY 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During May 1950			May Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births.....	5813	**	**	22.1	21.9	24.3
Total stillbirths.....	152	**	**	25.5	32.0	28.9
Deaths (stillbirths excluded).....	2164	1225	939	8.2	7.9	8.3
Infant deaths						
under one year.....	225	112	113	38.7	37.4	34.5
under one month.....	150	86	64	25.8	25.3	26.3
Cause of Death						
Tuberculosis, 001, 019.....	87	32	55	33.0	30.0	44.1
Syphilis, 020-029.....	11	3	8	4.2	5.3	9.2
Dysentery, 045-048.....	3	2	1	1.1	1.1	***
Scarlet fever, 050.....						0.4
Diphtheria, 055.....						0.8
Whooping cough, 056.....	5	2	3	1.9	0.4	1.5
Meningococcal infections, 057.....	4	4		1.5	0.4	0.8
Encephalitis, 082, 083.....	1	1		0.4		0.4
Measles, 085.....	5	1	4	1.9	3.0	0.4
Malaria, 110-117.....	3		3	1.1	1.1	0.4
Malignant neoplasms, 140-200, 202, 203†.....	203	139	64	77.1	77.8	87.5
Diabetes mellitus, 260.....	15	8	7	5.7	8.4	13.4
Pellagra, 281.....	2	2		0.8	2.3	3.1
Vascular lesions of central nervous system, 330, 334.....	256	150	106	97.2	96.4	92.5
Other diseases of nervous system, 300-318, 340-398.....	29	16	13	11.0	15.6	6.9
Rheumatic fever, 400- 402.....	5	2	3	1.9	2.3	0.8
Diseases of the heart, 410-443.....	661	399	262	250.9	225.1	190.0
Diseases of the arteries, 450-456.....	26	18	8	9.9	12.9	6.1
Other diseases of circulatory system, 444-447, 460-468.....	27	11	16	10.2	12.1	6.1
Influenza, 480-483.....	24	7	17	9.1	9.5	5.8
Pneumonia, 490-493.....	64	29	35	24.3	20.9	24.6
Bronchitis, 500-502.....					1.5	0.8
Appendicitis, 550-553.....	5	4	1	1.9	1.9	1.5
Intestinal obstruction and hernia, 560, 561, 570.....	16	5	11	6.1	4.2	4.6
Gastro-enteritis and colitis (under 2), 571.0, 764.....	12	3	9	4.6	4.2	3.4
Cirrhosis of liver, 581.....	13	11	2	4.9	5.3	5.4
Diseases of pregnancy and childbirth, 640- 689.....	13	6	7	21.8	20.1	26.0
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684.....	2	1	1	3.4	6.7	3.1
Congenital malforma- tions, 750-759.....	27	23	4	4.6	6.1	2.8
Accidental deaths, total, 800-962.....	163	100	63	61.9	47.8	65.6
Motor vehicle acci- dents, 810-835, 960.....	80	48	32	30.4	22.4	21.1
All other defined causes.....	374	214	160	142.0	144.2	195.4
Ill-defined and un- known causes, 780, 793, 795.....	110	33	77	41.8	41.8	42.6

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the May report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

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PROBLEMS OF GASTRIC CARCINOMA

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Cancer of the stomach kills more people in the United States every year than are killed by automobile accidents. Almost 40,000 of our citizens die annually of this disease and, of the 40,000 deaths, 78%, or 31,200 citizens, lose their lives from stomach cancer without ever having a chance for cure. This is a shocking statement, yet it is true. We must ask, how can these patients be given a chance? How can we salvage a greater number of these patients? This is a real challenge to American medicine, and may I interject at this point that it cannot be done by rules and regulations from Washington nor can Mr. Oscar Ewing do anything about it. The answer to this problem lies in the hands of the American doctors and the citizens of this great nation. Early diagnosis and early operation now constitute the only real hope for the victim of gastric carcinoma.

Carcinoma of the stomach has been known for generations. At least some of the late symptoms were recognized. As to whether or not carcinoma is increasing in incidence or whether we are more apt at recognizing it really holds little interest. The fact remains that the pathologic state we know today as carcinoma existed centuries ago.

Read before the Association in annual session, Birmingham, April 21, 1950.

Chief of Surgical Service, the Lankenau Hospital; Professor of Clinical Surgery, Graduate School of Medicine, University of Pennsylvania; and Associate Professor of Surgery, Jefferson Medical College.

Black vomitus was described by Hippocrates as being a bad prognostic sign. Some of his cases must have been gastric carcinoma. Avicenna, a Persian physician, described it in A. D. 1030. It was described again in the twelfth century by Avensoar of Spain and in the fifteenth century by Benevinius. In 1821 Nepven stated that in his belief carcinoma of the stomach was the "end result of chronic gastritis."

The active interest was stimulated by advances in diagnostic aids. Von den Velden in 1875 developed gastric analysis, then came the development of x-ray and fluoroscopy in 1910, and finally the gastroscope in 1932. It is true that Kussmaul in 1868 attempted gastroscopy and his first patient was a sword swallower. It was not until 1932, however, that it was improved and popularized by Wolf and Schindler.

As to treatment, the first subtotal gastrectomy was done in January of 1881 by Billroth. Many advances have been made since that time and the mortality rate from gastric resection has constantly been dropping.

If we take a brief look over the years of the progress in medicine it gives us hope for the future. In the days of the Roman Empire life expectancy was 27 years. In 1900 it was 40 years, while in 1920 it was 52 years. In the last 30 years, however, it has increased to 67 years. The great improvement has been made in the first half of this century. The reasons for this improvement are the improved public health; our greater knowledge of chemistry as related to human physiology; the development of hor-

mones, vitamins, and insulin; but, greatest of all, the development of the sulfonamides and the antibiotics.

Thus we see that longevity has been extended by medicine's control of epidemic diseases, some physiologic diseases and by control of infections. There are still two great challenges open to the medical profession. One is the control of degenerative diseases and the other, which concerns us now, the control of malignant disease.

In our discussion concerning cancer of the stomach what problems confront us? First of all, since it kills more people than does cancer of any other organ, let us look at those figures.

DEATHS PER 100,000 FROM CANCER

For all organs	106.2
Cancer of stomach	29.6
Cancer of female pelvis.....	14.9
Cancer of female breast.....	10.4

These figures bring to me a startling fact. It is generally considered that the female pelvis and breast are the worst offenders in carcinoma yet these figures show that carcinoma of the stomach claims more lives than the female pelvis and breast together.

In 1944 I reviewed and reported on diagnostic delay in carcinoma of the stomach. Another review was done in 1947 and showed little change in our figures. However, a third review in 1950 does show some improvement.

In the 1944 study our operability with hope for cure was only 17%, in 1947 it was 18% and now it has improved to 22%. There is some improvement but there is plenty of room for greater achievement.

The operability figures of my associates and I for gastric carcinoma are as follows in this most recent study:

Those cases which were not even considered for exploratory when first seen were 16% of the series. These were cases with extensive palpable metastases, ascites, involvement of the abdominal wall and moribund states.

The abdomen was opened, explored and closed in 42% of the cases. These were cases given the benefit of doubt by exploratory laparotomy.

Palliative operations were done in 20% of the series. These consisted of gastroenter-

ostomy to relieve obstruction in hopeless gastric carcinomas with metastasis.

Finally, in this series, in only 22% of the patients were we able to do a radical operation with a hope for cure. This to us is the startling fact of the study and stimulated us to find out how we could improve the situation so that more patients with gastric carcinoma may be salvaged. The answer to this problem seems to us to be two-fold: the difficulty in making the diagnosis, and the delay all along the line before the patient comes to operation.

DIAGNOSIS

The diagnosis is indeed difficult to make except in cases of a prepyloric lesion with early obstruction. By the time the usual classical symptoms occur the disease has hopelessly progressed. We studied our series for early symptoms and signs. We considered pain, loss of weight, anemia, nausea, hematemesis and a palpable mass, and discarded all of these as possible early signs.

The only early consistent symptoms that we felt gave an early indication to pursue studies were a tired and weak feeling, a loss of appetite, a loss of desire for meat, and indigestion (mild distress related to meals). If one considers the possible location of a carcinoma in the stomach, the only ones which will give real symptoms early are the ones in the prepyloric area, causing obstruction, or in the cardia, causing cardiospasm or obstruction at the esophagogastric junction. One may have a relatively large carcinoma in other locations without early symptoms.

The history of fatigue and loss of appetite with vague indigestion is enough evidence to demand a complete gastric study.

A history of gastric carcinoma in the family should make one even more suspicious and also demand immediate study.

Thus a complete gastric study should be done on patients presenting only slight or vague symptoms if we hope to make an early diagnosis and thus have early operation.

May I say that every case with a diagnosis of pernicious anemia should have a gastric x-ray. We have had several of our cases with a previous diagnosis of pernicious

anemia which later turned out to be gastric carcinoma.

DELAY

The delay in diagnosing this condition is the important factor to correct if we hope to salvage more cases.

There is, first of all, a delay in the onset of the symptoms. Some of our most extensive cases have had a history of only one month, and, in one case, three weeks duration. I urge you to remember this fact. It means the minute you see a patient with any symptoms you must start adequate studies at once. If you delay you might likely be the responsible person in robbing the patient of his chance for survival.

The second delay is on the part of the patient who has gastric symptoms in going to his physician. This can only be overcome by educating the public to the fact that if they have "stomach trouble" they should consult a physician at once. Unfortunately, today, patients take all the medicine advertised for "stomach ailments" before they consult their doctor. This has proven to be suicide in a number of our cases. The public education program is going to make neurotics out of some of the population but it will also save the lives of many citizens.

The third delay we found was the delay on the part of the physician to start adequate studies. I believe often this is due to the fact that so many patients working under pressure have gastric symptoms and the doctor is likely to be misled by that fact. I will discuss adequate studies later.

The next problem confronting us was the difficulty in diagnosing some of the cases. The patient with a carcinoma of the fundus is at times difficult to diagnose, as is the patient with a lesion on the posterior wall. Special technic and special angle shots must be taken by the roentgenologist in these cases or they will be missed.

Finally, there is the delay of the patient in following the advice of the physician. Again this becomes an educational problem. The physician in these cases must stress the importance of studies and must stress the fact that while their trouble may be a simple thing, nevertheless, it might be a very serious condition, namely, cancer. This story will usually make most patients cooperate in having a study done.

I would like to cite for you a study of delay done in Pennsylvania on a series of 2,000 cases of carcinoma. This refers to the delay of the patient in going to a physician. In the white female 15.9 months; in the negro female 15.0 months; in the white male 16.6 months; and in the negro male 9.9 months. Those figures impressed us with the educational job to be done. The delay on the part of doctors in having adequate studies done was 4.4 months. A lot of this latter delay was due to the lack of patient cooperation.

An interesting study was done by St. John, Swenson and Harvey in 1944 when they studied by x-ray a series of 2,413 cases. The only criterion established was that the persons selected should not have had any gastric complaints at any time. Their survey revealed three cases of gastric malignant growths, five cases of gastric ulcer, fifty-four cases of duodenal ulcer and one case of gastric polyp. These findings were in cases in which there was a negative gastric history.

At the present time Swenson is running a series of gastric studies on microfilm. He and several others hope to get a study of 10,000 cases. It may be that such a survey may be the answer to improving the survival rate in gastric malignancy.

STUDIES WHICH AID IN MAKING DIAGNOSIS

I believe that the most important studies which aid in making the diagnosis are roentgen examination of the stomach, gastroscopy, fractional test meal, serum protein determinations and complete blood count. I will discuss briefly each of these in turn.

First, roentgen study of the stomach is the most important study to be done, but in a number of cases is, in itself, not diagnostic but definitely an aid in diagnosis. There is, first of all, an error in the roentgen diagnosis of a lesion of the stomach (either ulcer or carcinoma) in 18% of our cases. After a lesion of the stomach was found by roentgen examination the error as to whether it was carcinoma or ulcer was 34%. Thus there is an error in roentgen study, and it is not infallible; nevertheless, roentgen examination is the first important step in the diagnosis.

The next aid to diagnosis is gastroscopy. This, I realize, is not available to all but it

is of great value. It is not without its dangers, particularly in older patients with friable tissue, but it is a relatively safe procedure in the large majority of cases. The error in gastroscopic examinations in our series of cases in diagnosing a gastric lesion was 17%, but the error in differentiating a lesion between ulcer and carcinoma was 20%. So, again, a test is available which is an aid but not without its error.

If, however, roentgen and gastroscopic examinations are done on a patient, then the error of locating a lesion in the stomach is cut down to 8%, and the differentiation between ulcer and carcinoma shows an error of only 14%. Thus the combined study cuts the percentage of error.

My belief as to roentgen examination and gastroscopy, which I have expressed before, is that they are both aids in diagnosis.

Should the roentgen examination show evidences of a gastric lesion and this is confirmed by roentgen examination after an antispasmodic, then a negative gastroscopic examination should be ignored.

The same holds true should the roentgen examination be negative and gastroscopic examination be positive for a gastric carcinoma.

The fractional test meal is another link in our chain of evidence. Fifteen per cent had an elevated acidity. Normal gastric acidity was found in 55%, and low gastric acidity was present in 30%. Here again, this test is not totally dependable but is a definite aid when observations are summarized.

The serum protein determinations can be of value in making a diagnosis. Fifty-six per cent had serum protein levels below 6 Gm. per hundred cubic centimeters. In 8% the levels were below 4.5 Gm.; in 18% the levels were between 4.5 and 5.5 Gm., and in 30% between 5.5 and 6 Gm. In 44% of the cases the serum protein was above 6 Gm. In view of the fact that the serum protein was low in 56% of the cases studied with normal volumes, I believe that here again is a diagnostic aid which must be recognized and used.

As to the value of the blood cell count, I should like to mention, in passing, that perhaps it can be a pitfall as well as an aid. Some of our cases presented a definite anemia. This anemia was at times a macro-

cytic type, and in other cases a microcytic hypochromic type of anemia was present. One may easily be led to make a diagnosis of pernicious anemia because of a low count and achlorhydria. I believe that in any case in which pernicious anemia has been the diagnosis a gastric roentgenogram should be made and that gastric carcinoma should be considered a possibility until proved otherwise. The most common type of anemia encountered was a microcytic hypochromic type. This is probably due to chronic loss of blood and malnutrition. The macrocytic type of anemia, which is probably due to loss of intrinsic factor, can easily appear as pernicious anemia. This has been reported also by Snell.

Other physiologic changes which occur, such as hemoconcentration, reduction in fixed base of the serum, increase in urea, diminution of plasma chlorides and an increased ability of blood to combine with carbon dioxide, are usually secondary to pyloric obstruction. There also seems to be a loss of vitamin K and of water soluble B complex; both losses apparently are due to low intake. All of these changes are not important as an aid in diagnosis but definitely must be considered and corrected in the preparation of the patient for operation.

I have so far tried to point out the perhaps insignificant symptoms which should make obligatory complete gastric studies on any patient. The important studies which were of value in our analysis were roentgen examination, gastroscopy, determinations of gastric acidity, determinations of serum protein, and complete blood cell count.

HOW TO REDUCE PRESENT HIGH MORTALITY

What then should be the procedure in an attempt to reduce the present high mortality from gastric carcinoma? I believe that the answers are simple, and I should like to enumerate the possibilities.

1. There is the possibility of screening groups by gastric roentgenograms.

2. Every annual physical check-up should include a gastric roentgenogram.

3. Lay groups should be educated to see their physician early if they have gastric symptoms lasting two weeks or more, or if they are tired and have lost their appetite.

4. Gastric roentgenograms should be done at once for any patient complaining of fa-

tigue with loss of appetite, and certainly if this is associated with indigestion.

5. Gastroscopic examination, fractional test meal, blood cell count, and serum protein determinations are aids in diagnosis. (I have not mentioned the numerous studies which should be done if operation is contemplated.)

6. *Operation should be done in any case in which a diagnosis of gastric ulcer has been made, even though the patient is asymptomatic.*

7. Operation should be done on any patient in whom a roentgenogram shows gastric carcinoma or in whom gastroscopy shows gastric carcinoma.

8. The operative procedure must be extensive.

THE CHOICE OF OPERATION

It would not be just to cite the causes for the high mortality and the low survival group without pointing out one more important factor in reference to the surgeon. If a surgeon takes upon himself the responsibility of doing a gastric operation for carcinoma, he must be thorough in his surgical

treatment. An extensive resection of the stomach should be done. Total gastrectomy is called for in many cases, and the surgeon should be trained to do this job, whether the approach is abdominal or transthoracic. The great, gastrohepatic and gastrocolic omenta should be removed. At times it is necessary to remove the spleen. I have used in selected cases the gastric pouch after total gastrectomy, which has made the patients more comfortable. The surgeon must do a complete operation for gastric carcinoma, just as he would do a complete operation for carcinoma in any other location.

Our mortality from exploratory operation is 0.2%. Subtotal gastrectomy results in a mortality of 1.2%, and the mortality from total gastrectomy is 14%. If any results are contrasted with the 100% mortality of unoperated gastric carcinomas, the demand is for exploratory operation in every questionable case.

The survival rate in gastric carcinoma can be improved. This requires team work by the patient, the internist and the surgeon. With the cooperation of these three groups, many lives can be saved.

DISEASES OF THYROID IN CHILDREN

WITH A CASE PRESENTATION

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Before presenting my case I would like to give a few references relative to thyroid diseases in children.

In 1926, Dinsmore¹ of the Cleveland Clinic said that "the incidence of hyperthyroidism in children, as has been pointed out by Hyman, is probably higher than would be supposed from the comparatively small number of cases which have been reported in the literature." In all of the 48 cases which were reported by Dinsmore, the patients were under fourteen years of age. He further stated that Buford, in a very exhaustive review of both foreign and American literature, found only 8 cases of exoph-

thalmic goiter in children under five years of age and only 18 cases in children under twelve years of age in a total series of 1,512 cases. In 1913, Lewis, of the Mayo Clinic, reported 5 patients all under ten years of age. In none of these series was there a male patient.

In 1923, Cowden, who had checked the literature on this point, noted that exophthalmic goiter had not been reported in a male child under ten years of age. In a series of 3,477 cases, Klein reported only 154 under the age of fifteen, and in this series the males were above twelve years of age.

In Dinsmore's series 1 child was five and one-half years old; 1, seven, although the onset of the disease could be definitely placed at the age of three; 2 were eight years of

¹Read before the Association in annual session, Birmingham, April 21, 1950.

1. Dinsmore, Robert S.: Hyperthyroidism in Children, Surg., Gynec. & Obst. 42: 172-176, 1926.

age; 2, nine; 3, ten; 4, eleven; 3, twelve; 13, thirteen; and 17, fourteen years of age. Among the males, 6 were fourteen and 2 were eleven years of age. According to Dinsmore, it has been difficult to find a definite etiologic factor to which hyperthyroidism could be attributed.

According to Climenko, there seems to be a definite hereditary predisposition. Klein, on the other hand, reports 3 cases in which hyperthyroidism followed the removal of tonsils, and Wheelon reports 1 case of a child four and one-half years old in whom exophthalmos with status thymolymphaticus followed varicella and mastoiditis. Klein also reports another case of a girl nine years old with a bilateral exophthalmos which appeared three weeks after an attack of scarlet fever.

"Question as to whether iodine may produce hyperthyroidism is raised by its widespread use in the schools for prophylactic purposes," according to Dinsmore, who adds that "hyperthyroidism, which may be due to this cause, does occur, but fortunately, in a very small percentage of cases."

It is interesting to note that the cardinal signs and symptoms of hyperthyroidism in children are identical with those found in adults; namely, tachycardia, loss of weight, and extreme nervousness. Exophthalmos may or may not be present as in adults.

In concluding, Dinsmore emphasizes the fact that hyperthyroidism in children is perhaps more common than has been supposed; etiology is unknown; onset is abrupt, and the clinical course rapid. Induced thyroidism may follow the prophylactic use of iodine in a very small percentage of cases and this can usually be controlled by discontinuance of the iodine. Children are extremely susceptible to all kinds of operative procedures and must be handled with extreme care; and in the presence of other foci of infection, the goiter should be removed first, the other foci of infection being removed after the patient has recovered from the thyroidectomy.

Arthur B. McGraw,² in reviewing the literature and citing the 48 cases of Dinsmore and the 30 cases of Holmholz's states: "First, juvenile hyperthyroidism is appar-

ently identical in its symptoms, course, and response to treatment to the adult syndrome known as exophthalmic goiter. Second, cases of juvenile hyperthyroidism are, in the present state of our knowledge, primarily surgical problems, and the sequence of events in their care should be rest, the administration of iodine, operation, rest, and observation under surgical supervision. Third, while we doubt that polar ligation of the superior thyroid arteries is a sufficiently radical procedure to insure a permanent recession of symptoms, we feel that one should be a shade more conservative in the relative amount of thyroid tissue left behind at operation as compared with that left in cases of adult exophthalmic goiter—even risking the necessity of subsequent re-operation, until we have some accurate data on the effect of subtotal thyroidectomy upon human growth and development."

In a series of 26 cases reported by Greene and Mora³ on whom thyroidectomies were performed, there were 22 girls and 4 boys and the outstanding signs and symptoms were tachycardia, nervousness, exophthalmic tremor, weight loss, palpitation, left heart enlargement, irritability, weakness, and restlessness. The symptoms correspond closely with those manifested in adults. Blood pressure, both systolic and diastolic, was elevated preoperatively and was reduced postoperatively with a corresponding drop in pulse pressure. The preoperative basal metabolic rate was increased with an average of + 34.6. The average postoperative rate was — 6.2. Microscopically, the glands examined showed varying degrees of hyperplasia and hypertrophy. One-stage thyroidectomy was done in every instance and there were no deaths reported in this series.

Herrmann,⁴ reporting on "Thyrotoxicosis in the Negro," states: "Exophthalmic goiter in children under the age of twelve years is unusual." He had observed 2 colored children, 1 boy and 1 girl, each seven years old, with a very severe degree of thyrotoxicosis associated with marked bilateral exophthalmos. The 1 Negro child mentioned in this

3. Greene, Earle I., and Mora, Jacob M.: Thyroidectomy for Thyrotoxicosis in the Young, *Surg., Gynec. & Obst.* 53: 375-377, 1931.

4. Herrmann, Louis G.: Thyrotoxicosis in the Negro, *Surg., Gynec. & Obst.* 55: 221-226, 1932.

2. McGraw, Arthur B.: Juvenile Exophthalmic Goiter, *Surg., Gynec. & Obst.* 47: 25-31, 1928.

series who was submitted for thyroidectomy showed a marked rise in the pulse rate several hours after the operation, with only a slight rise in the body temperature, and the pulse rate remained of good quality but was very rapid for several hours. By evening the heart rate had returned to about 100 beats per minute and the state of excitability had passed. The remainder of the postoperative course was uneventful.

In summarizing, Herrmann points out six factors as follows: (1) Thyrotoxicosis is not an uncommon disease in the Negro. (2) All varieties of the symptom-complex have been observed in the Negro. (3) The reaction to iodine therapy and subtotal thyroidectomy is essentially the same as in the white race. (4) There is no evidence that iodine therapy is contraindicated in cases of toxic adenomatous goiter in the Negro. (5) Psychic shock, financial worries, and domestic difficulties seem to play a part in precipitating this symptom-complex. (6) The removal of such irritating factors should be an essential part of the postoperative treatment of thyrotoxicosis of the Negro.

ADDENDA

In the presentation of the case at hand, it is interesting to observe that in practically all references in available literature on diseases of the thyroid in children there is very little noted relative to adenomatous goiter. In this particular case there was no clinical or pathological evidence of toxicity. There is also a slight variance with the literature in that this patient most likely had developed adenomatous goiter much earlier than was noted from the history. It is because of these findings and observations that the case particularly interested the writer.

CASE REPORT

S. B., age 6, colored female.

HISTORY

Chief complaint: Choking and dyspnea.

Family History: Father unknown. Mother, approximately age 40, living and well. No brothers or sisters.

Personal History: Usual diseases of childhood. No previous illnesses, injuries or surgical operations of major consequence other than for the past two years there has been a soft mass in the region of the thyroid. Present illness began approximately six months ago with choking and dyspnea. No history was obtained as to any previous treatment or any possible exciting cause for the rapid growth of the mass.

PHYSICAL FINDINGS

Physical examination revealed a Negro female, age 6 years, well nourished, complaining of choking and difficult breathing, especially when in a horizontal position. There was a lobulated mass which filled both anterior triangles of the neck, soft and mobile.

Head: Ears, eyes, nose and throat, negative. No exophthalmus, no lidlag.

Neck: Lobulated mass filling both anterior triangles of the neck, soft and mobile.

Chest: Breath sounds normal. Respiratory rate 24. No rales or adventitious sounds. No areas of consolidation.

Cardiovascular: Pulse regular, good volume. Rate 86. No murmurs. No cardiac enlargement. Blood pressure 90/50.

Abdomen: Soft. No masses or areas of tenderness.

Genito-Urinary: Negative.

Skin: Soft and elastic.

Bones and Joints: Normal. No adenopathy. Reflexes normal.

LABORATORY EXAMINATIONS

BMR normal.

Urinalysis, negative.

RBC, 3,310,000.

WBC, 12,500.

Hemoglobin, 65%.

Differential, polys. 49; lymphs. 49; eos. 2.

IMPRESSION

Adenomatous thyroid.

Patient was admitted to Druid City Hospital on June 29, 1949 for observation and treatment of adenomatous thyroid in preparation for surgery. Surgery was performed on July 6, 1949. Drop ether anesthesia was used and the operation performed in the usual manner for a subtotal thyroidectomy. An adenomatous thyroid gland was removed weighing 116.6 grams. Pathological examination revealed an adenomatous goiter with areas of atypical hyperplasia.

CONCLUSION

In conclusion, the chief interest in this case, in my opinion, lies in the fact that:

1. We have a rather unusually large adenoma of the thyroid.
2. There is no evidence, either clinically or pathologically, of toxicity.
3. Patient's age.
4. Racial incidence.

During the last twenty years a great and increasing interest has been taken in the incidence of tuberculosis in nurses and the methods to be used in an endeavour to reduce this. It is now clearly recognized that nurses, even in general hospitals where tuberculosis is rigidly excluded, run a far greater risk of developing this disease than do comparable members of the general population.—*Geoffrey Bewley, M. D., The Lancet, March 25, 1950.*

OBSERVATIONS ON INDICATIONS AND RESULTS IN
SPLENECTOMY

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INTRODUCTION

Until a few years ago the use of splenectomy in the treatment of blood disorders was restricted to three or four conditions, chief among which were congenital hemolytic icterus, primary thrombocytopenic purpura, and Banti's disease.

In recent years there have been striking advances in our knowledge of the physiology of the spleen in health and disease, as well as an increase in our knowledge of the hemopoietic and reticulo-endothelial systems as a whole. As a result of these advances there have been alterations in terminology and classification of some hitherto recognized conditions, and also the introduction of new clinical entities.

Time does not permit a complete discussion of all conditions in which removal of the spleen is indicated. Therefore such conditions as traumatic rupture of the normal spleen, rupture of the malarial spleen, either spontaneous or traumatic, torsion of the splenic pedicle in the so-called wandering spleen, and primary cysts and tumors of the spleen will be mentioned only in passing as absolute indications for splenectomy. It is generally recognized also that removal of the spleen as an incidental procedure in the performance of other abdominal operations is in order, either to facilitate the primary procedure or to increase the radicalness of certain resections for cancer.

In this discussion, however, we shall concern ourselves chiefly with two broad categories of hematologic disorders in which splenectomy is always or sometimes indicated: namely, (a) hypersplenism, and (b) congestive splenomegaly. It should be emphasized that in some of these conditions, moreover, the question of splenectomy is controversial. (Table 1.)

TABLE 1
INDICATIONS FOR SPLENECTOMY
Hematologic Disorders

1. Hypersplenism:

- a) Congenital hemolytic anemia

- b) Primary thrombocytopenic purpura
- c) Primary neutropenia
- d) Primary panhemocytopenia
- 2. Congestive splenomegaly:
 - a) Intrahepatic portal obstruction:
 - Banti's cirrhosis(?)
 - Laennec's cirrhosis
 - Posthepatic fibrosis
 - b) Extrahepatic portal obstruction:
 - Thrombosis of splenic or portal vein
 - Cavernomatous transformation of portal vein

HYPERSPLENISM

The term hypersplenism denotes an overactivity of one or more of the normal functions of the spleen. One of the primary functions of the spleen is the exertion of an inhibitory influence on the blood-forming mechanism in the bone marrow. This is evidenced by the fact that removal of the normal spleen is almost invariably followed by thrombocytosis and leucocytosis. Another function is that of destruction of red blood cells. In certain abnormal circumstances overactivity of this splenic function results in rendering the red cells more fragile than normal. This overactivity, or hypersplenism, may be selective, against only one of the circulating blood elements, or it may be total, affecting all of the elements.

Furthermore, this hypersplenic effect, whatever its manifestation be, may be primary, without known cause; or it may be secondary to one of a variety of factors, such as drugs, chemicals, allergic sensitivity, malignant tumor, or portal hypertension. It is of the utmost importance that a distinction be made between primary and secondary hypersplenism. In most cases of primary hypersplenism, results following splenectomy are excellent, whereas the opposite is often true in secondary hypersplenism. In the long run, careful diagnosis and proper selection of cases determine the incidence of good results following splenectomy. Therefore, close cooperation between surgeon, internist, and an experienced hematologist is essential.

Hypersplenism may assume the following forms:

(a) *Congenital hemolytic anemia.* In this condition there is typically a history of the disease in other members of the family; splenomegaly, anemia, spherocytosis and microcytosis, increased fragility of the red cells, and usually jaundice at some time. Moreover, the condition is characterized by the occurrence of crises—a sudden destruction of large numbers of red cells. The hypersplenic effect in this disease is that of rendering the spherocytes unusually fragile, and thus abnormally subject to the red-cell-destructive function of the spleen. Bone marrow study reveals hyperplasia of the erythroid, myeloid, and megakaryocytic elements. The spleen may attain extremely large size.

Congenital hemolytic anemia represents the strongest indication for splenectomy, and results are good in about 90% of cases.

Congenital hemolytic anemia must be distinguished from the acquired type. Rarely, splenectomy is indicated in the acquired type, but only after careful study and after failure of conservative therapy. Results in the acquired type are good in no more than 50% of cases.

(b) *Primary thrombocytopenic purpura* is characterized by a low platelet count, prolonged bleeding time, poor clot retraction, increased capillary fragility, and anemia. Usually the spleen is not enlarged. Sternal marrow study reveals abundant megakaryocytes of the immature type. It is this last feature that serves to distinguish the condition from secondary purpura, in which splenectomy is of no value. The immature megakaryocytes are thought to be the result of the inhibitory effect of the overactive spleen, which prevents the maturation of the megakaryocytes and the liberation of platelets into the circulating blood.

(c) *Primary splenic neutropenia*, another form of hypersplenism, was described as an entity by Weisman and Doan in 1946. It is characterized by splenomegaly and granulocytopenia. There is usually a hyperplastic bone marrow, a fact that serves to distinguish it from agranulocytosis due to ingestion of certain drugs or chemicals.

(d) *Primary splenic panhematopenia:* As has been pointed out, the hypersplenic effect may be either selective or total. In this last condition there is diminution of

platelets, red cells, and white cells, in the presence of hyperplasia of the corresponding elements in the bone marrow. Primary panhematopenia has, at times, been erroneously diagnosed aplastic anemia, and it is probable that among patients, who in the past have died under a diagnosis of aplastic anemia, are some who might have been saved by splenectomy. A simple examination of the bone marrow serves accurately to distinguish the two.

CONGESTIVE SPLENOMEGALY

Congestive splenomegaly is due to obstruction at some point in the portal system producing an increase in venous pressure. This obstruction may be intrahepatic or extrahepatic. The intrahepatic is by far the more common type and may be due to Laennec's cirrhosis, periportal cirrhosis, or fibrosis secondary to parasitic infestation. Extrahepatic portal obstruction may be due to thrombosis of the splenic vein or portal vein, or to a congenital anomaly of the portal vein known as cavernomatous transformation.

Banti's disease, long recognized as a clinical entity, belongs in the broad category of congestive splenomegaly. Indeed, there is some reason to doubt the existence of Banti's disease as a specific pathologic entity and there is a tendency today to substitute the term Banti's syndrome. The clinical manifestations of enlarged spleen, anemia, leucopenia, and, at times, enlarged liver are in reality the findings of portal hypertension. The enlarged, congested spleen may be the seat of secondary hypersplenism, and the resulting hematologic disorder, anemia and leucopenia may be profound. This feature of congestive splenomegaly can be relieved by splenectomy, and that procedure is sometimes indicated. However, it must be borne in mind that, in addition to hypersplenism, there are other grave accompaniments of portal hypertension. One of the most common, as well as most alarming, is hemorrhage from esophageal varices. These, of course, develop as the blood in the obstructed portal system finds collateral channels in anastomoses between the coronary veins and the esophageal veins. Removal of the spleen may relieve the portal circulation of about 40% of its blood load, but, as a rule, the varices are not cured by splenectomy. Too often following splenectomy there are recurrent episodes

of hemorrhage from esophageal varices, one of which almost invariably terminates fatally.

We may conclude by saying that at times splenectomy may be indicated in cases of congestive splenomegaly, but only after careful evaluation of the underlying condition. I believe that when splenectomy is contemplated for congestive splenomegaly the portal pressure should be measured at several points in the portal tree in an attempt to identify the point of obstruction. It

is probably true that in most cases of congestive splenomegaly a portocaval shunt is the procedure of choice.

The spleen in congestive splenomegaly is extremely large and is surrounded by dense very vascular adhesions, and its removal is often difficult.

CLINICAL MATERIAL

A series of cases of splenectomy has been reviewed and is briefly presented in Table 2. This series was collected from the rec-

TABLE 2
SPLENECTOMY FOR HEMATOLOGIC DISORDER
JEFFERSON-HILLMAN HOSPITAL 1945-49

Congenital Hemolytic Anemia	Sex	Age	Result		Remarks
			Immediate	Late	
G. McG.	F	24	Good	Good	
C. S.	F	14	Good	Good	
K. C.	F	57	Good	Good	Had transitory recurrence, 1947
H. D. G.	M	30	Poor	Died of purpura, 1947	Repeated bouts of blood destruction
R. V.	M	13	Poor	Good	Re-explored with negative findings
E. H.	F	30	Good but slow	Not known	
A. W.	F	42	Died on operating table		
R. M.	M	4 mo.	Good	Good	
H. R.	M	31	Good	Good	
N. J. C.	F	6	Good	Good	
J. M. L.	F	44	Good	Good	
Thrombocytopenic Purpura					
T. W.	M	5	Good	Good	
S. N.	F	5	Good	Good	
Hypersplenism With Anemia					
J. B.	F	22	Slow	Good	Generalized lymphadenopathy
Congestive Splenomegaly					
M. C.	F	17	Good	Poor	3 episodes of hematemesis
E. T.	M	48	Died in shock 24 hrs. p. o.		
C. H.	F	5	Poor	Died	Repeated bouts of hematemesis
J. A.	M	44	Died on 3rd p. o. day		
G. S.	M	45	Died on table—shock		
T. E.	F	41	Good	Good	
Gaucher's Disease					
L. F.	F	8	Good	Good	Secondary hypersplenism
Polycythemia Vera					
F. M. L.	M	63	Died on 12th p. o. day		Done for symptomatic relief
Unclassified					
A. R.	F	68	Died after transfusion reaction		Path. report—reticulum cell sarcoma

ords of the Hospital of the Medical College of Alabama, and, with few exceptions, the hematologic studies were carried out by Drs. Kracke, Riser, and their associates of the Department of Hematology. Surgery was performed by various surgeons, in some cases by the author, in some by other members of the staff, and in others by the resident surgeon.

As can be seen, by far the largest group of cases are those for congenital hemolytic anemia. The results in this group were uniformly good. Two cases of thrombopenic purpura are included and both of these responded favorably to splenectomy.

The other case of hypersplenism was one manifested by anemia and thrombopenia. This patient made a delayed though eventually a satisfactory response. She was last seen a month ago, six months after splenectomy, and at that time had a red count of 3.4 million and a hemoglobin of 84%.

The results of splenectomy in cases which we have classified as congestive splenomegaly were very poor. Three of the patients died in the early postoperative course. One of the others eventually died of hemorrhage from esophageal varices, and one has had two or more episodes of hemorrhage since operation.

The patient who had Gaucher's disease is doing well.

It should be pointed out that polycythemia is not an indication for surgery. Splenectomy was done in this case simply for the reason that the spleen was of such enormous size that it produced extreme discomfort. The patient, who was a physician, requested its removal. The postoperative death was a result of the disease itself rather than the operation.

Since the present series is relatively small, no reliable statistical deductions can be made. It seems worth while, therefore, to refer to other and larger series available in recent surgical literature. Representative series have been reported by Lahey and Norcross, and by Cole, Walter, and Limarzi. The former report a series of 83 cases, and the latter one of 87 cases. The results in the two series follow a similar pattern in that by far the best results are found following splenectomy for primary hemolytic anemia. In Lahey's series, 18 of 20 patients had good results while no in-

formation is available on the other 2 patients. In Cole's series were 23 cases of primary hemolytic anemia, of whom the results were good in 22 and fair in 1. Of 6 cases of splenectomy for acquired hemolytic anemia done by Lahey's group and 5 cases done by Cole's group, there were one good result in the former and 2 in the latter. In patients with congestive splenomegaly the results were not nearly so encouraging. Cole et al. report good results in 6 of 18 patients operated on with the diagnosis of "Banti's disease" and obstruction of the splenic vein. It is of significance that there were good results in only 2 of 13 cases of Banti's disease, but in 4 of 5 cases of splenic vein obstruction. Lahey and Norcross report good results in 17 of 25 patients subjected to splenectomy for congestive splenomegaly, but do not subdivide this group as to the type of congestive splenomegaly. An observation made by Cole, Walter, and Limarzi deserves emphasis; namely, that the mortality rate in any series of splenectomy will depend upon the proportion of cases subjected to operation for congestive splenomegaly, for this condition provides the greatest risk of all conditions for which splenectomy is advocated.

MISCELLANEOUS OBSERVATIONS

Based on our experience in this series, and on the experiences of others, certain observations seem in order:

1. *Time of operation:* As a general rule, splenectomy is an elective procedure. When indicated it should be performed when the patient is in the best possible condition to withstand surgery. In congenital hemolytic anemia it is desirable to perform surgery in an interval between crises. At times, however, one's hand is forced by the very profound anemia in a given case. Under these conditions an attempt should be made to bolster the condition of the patient by immediate transfusions. However, if reaction to transfusion occurs, further transfusions should be deferred and immediate surgery undertaken.

In certain cases of hypersplenism very profound deficits of some of the blood elements occur and emergency splenectomy is advocated by some. It would seem safer in most cases, however, to administer large quantities of blood and follow this by early operation.

In patients with congestive splenomegaly, it is essential to direct attention toward restoring, insofar as possible, depleted liver function, so frequently a major feature of congestive splenomegaly. Splenectomy is never justified in such cases until exhaustive liver studies have been made; indeed, these are equally as important as the hematologic studies.

2. *Technique of operation:* A detailed description of operative technique is not in order, but a few comments should be made. The type of abdominal incision is largely a matter of the preference of the surgeon. Either a paracostal or a left rectus is satisfactory. Use of the transthoracic approach is in most cases not desirable, despite the enthusiasm of a few recent authors. On the other hand, utilization of the combined abdomino-thoracic incision is to be encouraged in the case of an extremely large spleen, especially one in congestive splenomegaly. The extremely numerous and vascular adhesions can be readily dealt with under direct vision. The additional time consumed in making and closing the combined incision is more than compensated for by the ease of removal of the spleen.

3. *Biopsy of the liver* should be routinely made at the time of splenectomy. Examination of the liver may yield valuable information, not only by way of aiding in diagnosis, as in certain cases of congestive splenectomy, but also in assisting in prognosis. If enlarged lymph nodes are encountered in the abdomen, biopsy of these should be made also.

4. *Gallstones:* Pigment gallstones are often discovered as an incidental finding in the course of splenectomy for hemolytic anemia. When they are found, the gallbladder should not be removed, since this adds materially to the morbidity and probably to the mortality rate of splenectomy.

5. *Accessory spleens:* Nodules of ectopic splenic tissue occur at times and may be of major significance. These nodules, sometimes referred to as splenules, but better designated by the descriptive phrase accessory spleens, are found with surprising frequency. The incidence at autopsy has been variously estimated by different authors as being from 11% to 35%. The frequency with which they are found at the operating table is somewhat higher,

ranging from 20% to 44%. The higher incidence in operative cases is understandable due to the fact that under these conditions one is dealing with an abnormal spleen in the first place. The highest incidence occurs in patients with congenital hemolytic anemia. The incidence furthermore probably varies in direct proportion to the intensity with which the surgeon searches for the accessory organs. They may be found in a variety of locations: at the hilus, along the pedicle, in the gastrocolic ligament, behind the peritoneum in the region of the tail of the pancreas, or in the neighborhood of the kidney. They have even been found in the pelvis in the female, traveling down as the ovary descends during embryonic life.

The surgical significance of these accessory organs is considerable. Failure of removal of an accessory spleen, even though it be no larger than 2 cm. in diameter, may result in failure of splenectomy. Many cases are recorded in the literature of patients who have failed to respond to splenectomy for hypersplenism, and who, having been re-explored, were found to have harbored one or more accessory spleens. Removal of these splenules has, in most instances, resulted in correction of the original hematologic disorder.

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Even after clinical follow-up in minimal tuberculosis has confirmed the interpretation of the ill-defined x-ray shadow, the physician is faced with another and perhaps more serious problem. He must then cope with the question of the lesion's significance, and must decide upon the course of action to be taken in its management. Will the patient need to undergo hospitalization and surgical procedure? Can the lesion be managed under a home-care regimen? Or will it be sufficient to place the patient under long term observation, imposing only token limitations upon normal activity? It will be most urgent that these questions be resolved properly and decisively.

These are but a few of the problems which our screening survey experiences in communities and hospitals pose for us and for the medical profession generally. Meeting them directly and fully is the best assurance of effective tuberculosis control.—Robert J. Anderson, M. D., *Journal-Lancet*, April 1950.

PSYCHIATRY TODAY

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Psychiatry is at one and the same time probably the oldest of the medical sciences and also the newest. In primitive times all illnesses were attributed to the influence of spirits and demons, and this psychologic approach to illness preceded any medical approach. Mental illness was believed to be caused by the displeasure of the gods, and the mythology of these peoples demonstrate their three-part god figures. There was always the supreme ruler, the god of enlightenment and good deeds, and the wicked god. The old Germanic tribes had Wotan, Thor, and Loki; the Greeks had Zeus, Apollo and Poseidin, all very similar to the present day psychoanalytic concept of personality structure with its three systems, the super ego, the ego and the id. In Grecian times medical treatment had a great spiritual component, and today psychosomatic study of patients demonstrates that physical illnesses, like peptic ulcer and asthma, can be traced, in many cases, to conflict, anxiety and psychologic distress. In the Grecian sanatoria, those who were considered to be afflicted with the "god's displeasure" or mental illness were treated by sedative baths and massage, hydrotherapy, group philosophical discussion, music therapy, drama therapy and other types of treatment, which in many respects resemble the techniques used in the present day in our psychiatric hospitals. "Sweet words" were prescribed as treatment for mental disorders and now we talk of the "bedside manner" and "therapeutic personality."¹

Present day psychiatry has made great strides. Under the stimulus of the recent war, there was a great focusing of attention

on mental illness when we had to consider the large number of neuropsychiatric disabilities in our civilian population, noted at the induction centers, and the numbers of service personnel who were discharged for neuropsychiatric reasons. In the state of Alabama there are 266,000 veterans of the recent war. Of this number, 8,893, or 3.3% have service connected psychiatric disabilities; and 81.08% of these have psychoneurotic types of illnesses. The remainder are afflicted with one or another of the psychoses.

In recent years methods of producing psychotic-like illnesses have been established. Psychiatric illnesses can be tested, and clinical diagnoses confirmed in the psychologic laboratory with definitive intelligence and personality tests. Deviation from and return to established normal levels can be followed. Thus, psychiatry can meet the requirements of an exact medical science: clinical diagnosis, laboratory testing and reproduction of the disease.

The ability to reproduce clinical symptoms affords an opportunity to test the efficacy of therapeutic methods. Adrenocorticotrophin (ACTH), when given in effective doses over a considerable period, may cause psychotic-like manifestations.² Diisopropyl fluorophosphate, a cholinesterase inhibitor, may also produce psychotic-like conditions.³ Lysergic acid, a sympathetic paralyzant, can bring out schizophrenic-like symptoms.³ Synthetic mescaline, an alkaloid drug, can produce mental symptomatology,⁴ as can phenurone, an anticonvulsant. Under sodium amytal interviewing and even with psychoanalytic probing, the psychologic factors can be used to set off a train of psychic events.

Psychiatric treatment has developed along

Since this paper was written, Dr. Rackow has become a member of the staff of the Veterans Hospital, Montrose, N. Y.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

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three broad lines: psychologic, physical and pharmacologic. Many techniques are available to meet the needs of individual patients. The psychoanalytic technique by the method of "free association" is the main therapeutic device in the psychologic group. This long and difficult procedure can be shortened at times by the use of amytal or pentothal interviews to bring the main emotionally traumatic basis to the surface more quickly. Hypnosis may also be used in the same way. To reach larger numbers of patients, as is necessary in our mental hospitals, group and psychodrama techniques of psychotherapy are available. The ancillary methods of treatments are also valuable; such as bibliotherapy, art and music therapy, occupational therapy, retraining and reeducation, the rehabilitation techniques and social service manipulation of the family situation. These methods may be used for both psychoneurotic and psychotic patients.

The physical methods of treatment are usually reserved for the more severe mental illnesses. The original electroconvulsive technique is still most widely used. Many variations are also in use, such as a brief stimulus type of electroshock, subconvulsive electrocoma and electronarcosis.

Psychosurgery might well be considered as a physical method of treating mental disorder. Neurosurgical interruption of the fronto-thalamic pathways can be accomplished by the original closed method through posterior frontal burr holes, or by laying back a bone flap and proceeding under direct vision. Topectomy (the ablation of specific areas of frontal lobe cortex), subcortical undercutting, transorbital lobotomy, and thalamotomy (the destruction of the dorsomedial nucleus of the thalamus by electrocoagulation with a stereotaxic apparatus) are used.

Pharmacologic or chemical therapy includes deep insulin coma treatments for severe mental illnesses and subcoma or ambulant insulin therapy for the alleviation of anxiety symptoms. The use of histamine injections is being reinvestigated. Dibenzamine, an adrenalin antagonist, is sometimes helpful in relieving tension states. Amytal or pentothal interviews have a therapeutic effect, as well as a diagnostic one. Carbon dioxide inhalations to produce light coma

are used to release tensions and stresses in the patient. Penicillin in the treatment of the psychoses of central nervous system syphilis hardly needs mention.

The indications for treatment are fairly well established and the choice of therapeutic agent is wide. No matter what type of treatment is used the patient-physician relationship is probably the most important aspect of the problem. Psychotherapy in one or other form should be intensively used, together with the other types of treatment. Psychiatry today has a valuable contribution to make to the health of the people of our communities as a part of medical science.

PEDIATRIC CASE REPORTS

Edited by
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This four weeks old white female was brought to the Children's Clinic with a history of having vomited every feeding for one week. The vomiting was projectile, and usually occurred immediately after or during the nursing. The stools were infrequent.

After the child had been given water or milk, large peristaltic waves could be seen passing from left to right across the upper abdomen.

She was given a thick cereal feeding* and atropine† which failed to control the vomiting.

Barium was given by mouth and the following is Dr. Grady Ford's report: "Barium meal enters the stomach by use of a catheter. There is some evidence of milk curds in the slightly dilated stomach. The pylorus is markedly narrowed and elongated and very little of the meal could be seen passing

*Formula for thick cereal feeding:

Evaporated milk—13 ounces

Water—17 ounces

Cream of Wheat—4½ tablespoonsful

Cook in a double boiler for 1½ hours then divide equally in 6 bottles and give 1 bottle every 4 hours.

†Atropine sulphate—Gr. ¼

Water—q. s. 1 ounce

Sig: 2 drops 15 minutes before each nursing every four hours.

Each drop contains approximately 1/2000 of a grain.

through same. Two-hour interval: There remains considerable amount of residue in the stomach; small portions have passed into the duodenum. Four-hour interval: Very little of the meal has passed the stomach since the two-hour film. There remains considerable amount of residue even though some has been vomited."

The symptoms and findings in this case were typical of pyloric stenosis.

A Ramstedt operation was performed by Dr. J. O. Morgan.

Since there was some dehydration, intravenous Lactate-Ringer's solution was given the night before and 60 cc. of citrated blood were given during the operation. She made an uneventful recovery.

DISCUSSION

The majority of these cases occur in male babies. The symptoms seldom occur before the age of two weeks but may occur as late as six to eight weeks of age.

The pathogenesis of stenosis is obscure: the primary condition appears to be a hypertrophy of the muscle which is congenital; to this, spasm is added. The degree of hypertrophy and of spasm varies in different cases but in practically all cases both factors are present.

With experience the hardened pylorus can be felt in most instances about 1½ to 2 inches below the costal margin, just inside the mammary line. It may be obscured by distention, enlargement of the liver and persistent crying. It is my practice to use medical treatment for not longer than two days, which consists of thick cereal feeding and adequate doses of atropine. If there is no improvement and the x-ray findings are positive, operation is advised. In my opinion the only good treatment for pyloric results are uniformly good if done early stenosis is surgical, which should be done as soon as the diagnosis can be made and before the baby's condition deteriorates. The enough.

It would seem that these infants could tolerate a full feeding after the anesthetic nausea has subsided, but experience reveals that a small amount should be started and the amount increased gradually to prevent a return of the vomiting. Postoperative use of atropine is seldom required.

Diabetic Coma—The greatest problem which the physician has in the treatment of diabetic coma is his own fear of large doses of insulin. The entire literature of diabetic coma reflects that fear. I remember when we were told to give 20 units of insulin every two hours after an initial dose of 40 to 50 units. Some of us felt that we were very bold when we began to use 100 units as an initial dose and then as much as 40 units every hour. Now, without even measuring the level of the blood sugar we feel that 200 units should be the initial dose and that 50 units should be given every half hour afterward for two to three hours or more in severe cases. Recently a report in the *Lancet* advises an initial dose of 300 units and I am inclined to follow.

The patient's stomach should be lavaged and the tube left in for constant drainage, for dilatation of the stomach is almost a constant concomitant of this condition.

Infusion of saline (0.9 per cent) is begun at a rapid rate, and when the urine sugar begins to drop rapidly (to a greenish yellow or yellowish green reaction) 5 per cent glucose in saline is substituted. If shock is present, plasma or blood is infused into the other arm. Sodium lactate or even sodium bicarbonate is used in patients who have been in coma for more than two hours. The glucose is continued in sufficient quantity to keep some sugar in the urine so that the large doses of insulin can be continued until the patient is definitely improved. Hypoglycemia during this period must be avoided. The insulin dose and frequency is diminished as the patient improves, unless glycosuria is very heavy at this time.

No elaborate laboratory apparatus or complicated calculation is necessary to the treatment of diabetic coma. Delay in treating diabetic coma is the greatest cause of mortality of diabetic coma. Yet many a patient's treatment is delayed by precious hours lost in transportation because the practitioner is under the impression that the patient must have the so-called advantages of special laboratory equipment and that one versed in the complexities of the problem of diabetic coma must be on the scene. Actually, everyone can get insulin, everyone can use infusions, and whether the patient be in the small town or the city makes a difference only because there may be more experience with the problem in the city. However, this difference is very small compared to the difference which is made by the loss of time involved in moving the patient. The important thing is that the patient receive large doses of insulin, large volumes of intravenous fluid and salt, and have a gastric lavage immediately, and it makes little difference where he is when this is done.—*Gardberg, New Orleans M. & S. J., October '50.*

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SALINE SOLUTION IN TREATMENT OF BURN SHOCK

The Surgery Study Section of the National Institutes of Health has recommended to the Surgeon General of the Public Health Service that the use of oral saline solutions be adopted as standard procedure in the treatment of shock due to burns and other injuries in the event of large-scale civilian catastrophe.

The recommendation followed action taken at the January 1950 meeting of the Surgery Study Section, when such treatment was approved in principle. Dr. Carl A. Moyer, a member of the Study Section, was designated at that time to prepare a memorandum suitable for submission to Dr. Norvin A. Kiefer, Director, Health Resources Division (now Health Resources Office), National Security Resources Board.

Dr. Moyer's memorandum, which was submitted to Dr. Kiefer, February 15, 1950, reads as follows:

"Since the publication of the experimental work of Dr. Rosenthal, Dr. Coller, et al., orally administered salt solutions have been employed in the treatment of burns at the University of Michigan Hospital, Ann Arbor, Mich., at the Wayne County General Hospital, Eloise, Mich.; and at Parkland Hospital, Dallas, Tex. Personal clinical experience, in the above-named hospitals,

has convinced me that the orally administered salt solutions are valuable adjunctive agents in the treatment of shock incident to burns, fractures, peritonitis, and acute anaphylactoid reactions. Certain factors are important in governing the effectiveness of the oral administration of salt solutions. They are as follows:

"1. The composition of the salt solution: The most palatable salt solution is made by dissolving 3 to 4 grams of sodium chloride and 2 to 3 grams of sodium citrate in each liter of water. If sodium citrate is not available, ordinary baking soda may be substituted for it.

"2. The concentration of salt should not be in excess of 140 milliequivalents of sodium per liter. If the concentration is above this, vomiting and diarrhea became important complicating factors.

"3. Whenever profound peripheral circulatory collapse is present, the intravenous route of administration must be used until peripheral blood flow has been reestablished. The salt solutions that we have found most satisfactory for this purpose are Hartmann's solution (Lactate-Ringer's solution) or plasma. In addition to the salt solution or plasma intravenously, whole blood is given concurrently whenever peripheral circulatory collapse exists. This materially implements the effectiveness of salt solutions.

"The slightly hypotonic salt solution is the only drinking fluid permitted the injured individual until the edema of the injured parts begins to subside. Certain exceptions to this rule have to be made during the hot weather of summer when it is sometimes necessary to permit the partaking of some non-salty water.

"As much as 10 liters of the hypotonic salt solution have been drunk in the 24-hour period by adults who have been severely burned. Since salt solution has been substituted for water, as a drinkable fluid, no burned person who has lived for longer than 3 hours after being admitted to the hospital has suffered from anuria. The 'early toxemia phase' of the burns has also failed to appear and the osmotic concentration of the plasma electrolytes has been well maintained.

"We feel that much more clinical obser-

vation and actual experimental work should be undertaken regarding the effectiveness of the basic principles of the supportive therapy of burns that have been so beautifully demonstrated by Dr. Rosenthal. It is obvious that the adoption of a more active program of investigation into the relative effectiveness of simple measures to combat shock would be of extreme importance to the Armed Forces and to the civilian population in the event of another war."

Because of the sharpened national emergency that developed during the summer of 1950, the Surgery Study Section, in approving Dr. Moyer's memorandum at its meeting on September 16, changed the last paragraph to read:

"While further clinical research concerning the effectiveness of oral salt solution in the treatment of burns and other injuries is certainly in order, there is already sufficient evidence to suggest that this form of treatment should be used in any large-scale disaster involving the civilian population."

The Surgery Study Section letter to the Surgeon General, dated September 16, 1950, reads as follows:

"It is my understanding that one of the functions of the Study Sections is to offer advice to the Surgeon General in fields of medicine lying within the special competence of the Study Section members. At the January 1950 meeting of the Surgery Study Section, there was considerable discussion concerning the use of oral saline solutions in the treatment of burns and other serious injuries. It was the consensus of the Section at that time that, on the basis of the animal work which had been done by Dr. Rosenthal of the National Institutes of Health, and the clinical work which had been done by Dr. Carl A Moyer, by the undersigned, and by others, the efficacy of such treatment had been definitely demonstrated and that, while there is need to stimulate additional research in this field, our present knowledge is sound enough so that action can be taken on this basis. Dr. Moyer was designated to draft a short memorandum expressing our point of view on this subject. Such a memorandum was prepared and furnished to Dr. Norvin C. Kiefer, Director, Health Resources Division, National Security Resources Board, on Febru-

ary 15, 1950. A copy of Dr. Moyer's memorandum is attached.

"In view of the more acute national emergency that has developed since Dr. Moyer wrote this memorandum, the Study Section, at its meeting on September 16, 1950, voted to recommend that the principles of treatment outlined in his memorandum be adopted for widespread use in any large-scale disaster involving the civilian population. Because of the present emergency situation, we have modified the last paragraph of Dr. Moyer's memorandum to read, 'While further clinical research concerning the effectiveness of oral salt solution in the treatment of burns and other injuries is certainly in order, there is already sufficient evidence to suggest that this form of treatment should be used in any large-scale disaster involving the civilian population.'

"You are at liberty to transmit this recommendation of the Surgery Study Section to the National Security Resources Board or to other proper agencies, and, if you see fit, to publish it. We feel strongly that it is important for the medical profession of the country and for those planning for the handling of potential disasters to be informed of the value of this simple and easily carried out form of treatment."

TREATMENT OF ANEMIA

"Management of the patient with anemia is a very common problem for every practicing physician, whether in general practice or one of the specialties. This problem is complicated rather than simplified by the continuous bombardment of advertisements for antianemic preparations, letters which are confusing because in general they are filled with half-truths and incomplete summaries of reliable medical articles, cleverly interwoven to seem to support completely unjustified conclusions. In the face of this it is difficult for us to retain proper perspective of the problem of the anemic patient and realize that his management should be quite easy. For if any one can answer a few simple questions about the anemia, the proper treatment is usually obvious. The basis for the decision is not complicated; it consists of a history and physical examination, a complete blood count, a hematocrit, and occasionally a serum bilirubin, reticu-

locyte count, gastric analysis, or other laboratory study. With this information one can usually answer the key questions: 'Is this patient anemic?', 'Is this an acute or chronic anemia?', 'What is the average cell size (or volume index)?', and 'Are the cells deficient in hemoglobin (i.e., is the hemoglobin concentration or saturation index low)?' "

The above is the opening paragraph of the excellent article by Arrowsmith¹ dealing with this widespread and ever present condition. Because of limitation of space only portions of this study can be considered here.

The author says that "If a patient really needs iron, how much and what compound is best? The best preparation is a simple, readily soluble ferrous salt, and the two most commonly used are probably ferrous sulfate and ferrous gluconate. Ferrous sulfate is less expensive, and in proper dosage is usually well tolerated; however, those patients in whom gastrointestinal disturbances develop from ferrous sulfate usually are able to tolerate the gluconate satisfactorily."

And then we come to the following highly significant paragraph: "The market is flooded with iron preparations combined with liver, folic acid, vitamins, bile salts, thyroid, and copper. What advantages do these have? None. If the patient actually needs iron, then iron alone is adequate. If there is a complicating disorder, it should receive treatment on its own merits. In therapeutic doses iron is absorbed satisfactorily even in the complete absence of hydrochloric acid, and clinical experience as well as experimental evidence amply confirms the fact that none of these so-called adjuvants need be given for completely satisfactory treatment of the iron deficiency. Furthermore the use of such 'shotgun' preparations too often ruins the opportunity to confirm the diagnosis by observing the response to the one factor which is needed. Finally, the cost is often multiplied manifold."

And lastly we are told: "The two most common anemias have been saved till last. The first of these, and the most common

true anemia, is the simple normocytic normochromic anemia seen in patients with systemic disorders ranging from mild endocrine dysfunction to severe infections and malignancies. This anemia is not understood but appears to be the result of deranged metabolic processes in the patient. There is no effective treatment at present for this type of anemia, save correction of the primary disorder; if this can be done, the anemia disappears spontaneously and often surprisingly rapidly. Transfusions are of temporary value as a preoperative measure, but otherwise their benefit is fleeting and their expense and inconvenience seldom justifiable. The second and even more common is the patient, usually a woman, with neurasthenic symptoms whose hemoglobin is so often in the normal range but slightly below average, and who therefore has a diagnosis of anemia made and intensive therapy, usually parenteral liver or a 'shotgun' preparation, started. The original diagnosis of anemia is usually based on either laboratory error in single blood count or failure of the physician to recognize that hemoglobin values of 11 gm. (or 70 per cent) or even less may be, and often are, normal values for that patient. The increasing cognizance on the part of the public of functional disturbances makes it even more important to explain the problem to the patient rather than focus her attention on one facet of it, thereby strengthening her suspicion of organic disease and making the eventual proper management of her problem more difficult. Suffice it to say that no antianemic preparation has any effect on the hemoglobin level of this group of patients, beyond the normal variation from one blood count to the next.

"In summary, the choice of a therapeutic agent in anemias depends upon establishing the presence of the anemia, its type, and its etiology. Judicious transfusion of whole blood may be a necessary supportive measure in a very ill patient while studies are made pending definite therapy. If the anemia is a true macrocytic anemia, the choice of therapeutic agents is still concentrated liver extract, with a few exceptions, although vitamin B₁₂ may eventually prove a satisfactory substitute. If the anemia is due to iron deficiency, the only agent necessary is a simple ferrous salt. The use of

1. Arrowsmith, William R.: Choice of Therapeutic Agents for Anemia, New Orleans M. & S. J. 102: 435-438 (March) 1950.

complex hematopoietic agents is unnecessary and merely increases the expense and confusion."

Anemia is so widespread and prevalent, even though often it is more or less trivial and temporary, that every practitioner encounters it frequently. And, unfortunately, the treatment of anemia is all too often not well directed or carried out. Arrowsmith has done well to call our attention to this situation and it will be fortunate if his sound admonitions are heeded. And he is upon especially firm ground when he warns against the excessive and indiscriminate use of "shotgun" antianemic preparations.

ARMY TESTS NEW BURN DRESSING IN KOREA

Two new oversized dressings for burns or wounds will soon join other medical advances which help to provide the best medical treatment obtainable to G. I.'s fighting in Korea, according to Major General R. W. Bliss, Army Surgeon General.

One of the projects of the Army Medical Service's Research and Development Board, the new dressings consist of an inside or wound layer of highly absorbent fine mesh gauze, which may be treated to reduce irritation to wounds; and an outside, nonabsorbent layer that prevents bacteria from entering the wound or burn. These qualities will permit the dressings to be worn for as long as 14 days, whereas present type burn dressings must be changed every day or two, depending upon the degree of the burn.

Smallest of the dressings, 19 by 34 inches, are about five times larger than the largest size now in use. The larger one, for more extensive burns or wounds, is 34 by 45 inches. These dressings were developed for use during the first aid phase of treatment to give the casualty every benefit of Army medical research possible, and to improve his chances of reaching a hospital for definitive treatment.

These dressings will offer much greater protection to a large burned area, such as a tanker might sustain when his tank is hit, or a soldier might receive from the burst of a high explosive bomb. In the case of severely burned extremities, a dressing can be wrapped around the affected part.

Wounds resulting from blast, where small particles of loose debris have entered the skin over a considerable area, may also be treated with the dressings. In the event of an atomic bomb burst, both dressings would be invaluable.

The smaller dressing also may be used as an arm splint when tightly applied. The dressings are packed in a plastic bag that is resistant to water, moisture, and heat.

X-RAYS IN DIAGNOSIS OF HEAD INJURIES

X-rays are playing an ever-important role in the diagnosis of head injuries, Dr. Robert J. Gross, of Lyons, New Jersey, says in a recent issue of *The American Journal of Roentgenology and Radium Therapy*.

The recent war, with its large number of civilian accidents, "has resulted in ever-mounting concern with the early and late symptoms of head injury," he says.

The patient who has had a head injury and suffers from headache, memory lapses, inability to concentrate and vague bodily complaints, "poses a problem in differential diagnosis which calls upon the utmost in our diagnostic armamentarium," Doctor Gross states in his article, which is written primarily for physicians who specialize in x-ray diagnosis and treatment.

Doctor Gross is connected with the Departments of Radiology, New York Medical College, Flower Fifth Avenue Hospitals, and the Veterans Administration Hospital at Lyons, New Jersey.

Doctor Gross said that in cases suggesting a depressed fracture with possible brain injury emergency x-ray studies should be made immediately so that corrective surgery may be employed.

He wrote that in head injuries, generally, the presence of a fracture line is "much less significant" than determining whether hemorrhage, or concussion or contusion or laceration of the brain exists.

Frequently, he said, a patient with head injury is taken immediately to the x-ray department even though he is in shock—"a condition which requires primary consideration." The additional manipulation of the injured head, which is inevitable in x-ray examination, might cause further damage or aggravate the symptoms.

"Unfortunately, many institutions, particularly those of the city, state or federal government, require that x-ray films be taken as soon as possible after the patient is brought into the hospital," he said, adding: "In institutions of this type, the authorities should be educated to the fact that examina-

tion had best be deferred for a week or 10 days unless definite indications exist for immediate x-ray study."

He said that in cases where x-ray examination has to be made, every effort must be made to avoid excessive manipulation of the injured patient.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

TAKING STOCK

W. A. Dozier, Jr.

Director of Public Relations

Every so often one must take stock of what has been accomplished. To many people this assimilation of data is looked on as a time to be happy because progress has been made and a time more or less to rest on one's laurels. To people who are more intimately connected with a certain undertaking it is a time in which one views, not so much for pleasure, the work accomplished; instead one actually sizes up the unaccomplished parts of a program.

With that purpose in mind, let us briefly view the past and future. An attempt will not be made to be definitive, for that which is completely terminated is often of little value in deciding where the next move should be made. Also in an article of this length it is not possible to touch upon all that is being done or will have to be done. There are, however, certain things which need reemphasizing here.

On the matter of organization there are still deficiencies. As yet it cannot be said that every County Medical Society has a Public Relations Committee. Some Societies feel that they are too small to bother, that they do not meet often enough to do any constructive work, or that it is more trouble than it's worth. Perhaps there are other reasons, but no matter the reason the fact remains. With the active P. R. Committees functioning at present a great amount of very important work has been done. These will continue to do excellent work. Still there may come a day when something is needed in a county where there is no committee. The delay caused by not having this committee may very easily be detrimental to the project underway.

The Health Council, on the state level and in some counties, has made some admirable progress. Still there is room for more work to be done. The Council has from time to time been discussed in this column. It is well understood that any group movement should be carefully planned and should be on a firm foundation. However, more County Councils are badly needed. A few have been formed in the past year and these are active, as are some of the older councils. There is room for a great many more of these throughout the state.

The Woman's Auxiliary has begun to take its place in the sun. It has grown in size and in scope of activities. Yet, there are a number of areas in the state where a county organization has not been formed. Many of the ladies are not interested, and often many of the physicians do not care to give the counsel so urgently requested by the Auxiliary members. These County Auxiliaries can and do serve a very definite purpose in the over-all picture. It behooves the Medical Society to help its Auxiliary, for the Auxiliary in turn can help the Society. So often one hears that the men do not seem to be interested in the Auxiliary or its help. If this be true, that person has a mistaken notion; for this group can render great service.

Turning now to the Association's positive, five-point program, one realizes that a mere beginning has been made. This program will of course be uppermost in the minds of many for sometime to come. Already a request for information and data has gone out to the County Societies, and many have already answered. To put such a program into operation will take the help of all. It is felt that this assistance will be forthcoming at the proper time, yet it is one thing that

still remains incomplete.

As was said earlier, this article does not pretend to be definitive. Neither does it try in any way to censor any person or persons. It is merely an attempt to enumerate some of the many jobs still before us, jobs that must and will be done over a period of

time. What value is there to such an enumeration, partial though it may be? Perhaps there are many values, but surely one purpose is served. The feeling which some may have that resting is now in order will surely be exploded merely by viewing some of the many projects still unaccomplished.

WOMAN'S AUXILIARY

Mrs. J. G. Daves, Cullman, President

MEETING OF THE BOARD

The annual Board meeting of the Woman's Auxiliary to the Medical Association of the State of Alabama met September 7, 1950 in Birmingham at 10 A. M. at the Woman's Club. Mrs. Gordon Daves, State President, presided. Mrs. W. J. Rosser, Past President, gave the opening prayer. Mrs. Hurley Knight, President of the Jefferson County Auxiliary, gave the welcoming address, which was followed by the response by Mrs. N. T. Davie, Anniston. Mrs. M. S. Whiteside, Secretary, read the minutes of the 1949 Board meeting, and they were approved as read.

Mrs. Daves reported on the national convention of the Auxiliary held in San Francisco. She told of the great potentialities of local, state and national auxiliaries. She further stated that the national organization gave particular stress to organizing more county auxiliaries, and that where no county auxiliary is possible, to interest more doctors' wives in becoming members-at-large.

Mrs. Fred Reynolds, President-Elect of the State Auxiliary and Organization Chairman, outlined plans of work for the year. Using a map of the state of Alabama as reference, she pointed out the twenty counties having organized Auxiliaries, and the eight counties having members-at-large. This means that only twenty-eight of the sixty-seven counties in Alabama are doing their share of work for the state and national organizations. Every county should be organized, and certainly counties with as many as ten doctors have no excuse for not having an organization. The others should be able to boast 100% in members-at-large. Mrs. Reynolds further discussed the possibility of having at least one meeting a year in each of the four sections of the state,

thereby giving county auxiliaries and members-at-large closer contact with the state and national organization.

Mrs. H. L. Rosen, Fourth Vice-President, gave a short report.

Mrs. John Chenault, Chairman of Revisions, presented a large number of revisions to the Constitution and By-Laws to be voted upon at the annual meeting in April 1951. The revised Constitution and By-Laws appear in this issue of the Journal. Please read them carefully.

A "True or False" quiz was answered by the Board members.

Miss Margaret Cotton of the Alabama Heart Association spoke briefly on the work of the Association, and its aim to teach people having heart disturbances to live fuller and brighter lives, without danger.

Mr. W. A. Dozier, Director of Public Relations of the State Medical Association, was guest speaker, having for his topic "Our Broadening Scope." He stressed that more than ever Auxiliary members must become familiar with all legislation relating to the health of the nation, and to be able to recognize any "wedge bills" which, if passed on, might eventually lead to too much government control of medicine. He emphasized the necessity of every doctor's wife being a voter, having a voice in our government. He further asked that we make a careful study of the 12 Point Program of the American Medical Association in order that we may know what is being done, and what can be done towards furthering this program throughout the nation.

Following Mr. Dozier's address, a moving picture, with sound effect, taken at the convention of the A. M. A. in San Francisco, was shown. The entire address of Dr. Elmer L. Henderson, newly installed President of the A. M. A., was heard. His address was

dynamic and filled with determination that the health of the nation shall never be dominated by politics. He pledged his every effort as President of the A. M. A. to keep American Medicine free, unhampered and unrestrained in its future development. His brief review of the growth of medicine within the past few years, which has given to our country a health record unsurpassed by any other nation in the world, was proof positive that its continued progress must not be endangered. The Board members who were privileged to hear Dr. Henderson's address, even in this manner, could not help but feel honored in having the opportunity to work for the freedom of our great country along side of this great man.

Dr. Fagan Thompson, pastor of the First Methodist Church in Cullman, was speaker at the luncheon. Dr. Thompson received his Ph.D. degree at the University of Edinburgh. He is an authority on hymnody, is a theologian and a preacher. Before becoming associated with the First Methodist Church in Cullman, Dr. Thompson was pastor and Minister of Music in the Galloway Methodist Church of Jackson, Mississippi, and went from there to the First Methodist Church of Auburn, Alabama. His discussion of the great need for love and understanding in a world torn by hatred and greed furnished much food for thought. Dr. Thompson further added to the enjoyment of those present by rendering a few vocal selections prior to the luncheon.

Mr. Robert Jemison of the Hospital Service Corporation of Birmingham gave interesting information regarding the Blue Cross-Blue Shield medical care plan, and made special reference to the individual insurance now available.

Dr. J. M. Weldon of Mobile, President of the State Medical Association, made a special trip to Birmingham to attend the Board meeting, and his presence was greatly appreciated. Dr. W. J. Rosser, Chairman of the Advisory Council of the State Auxiliary, was also an honored guest at the luncheon, as was Dr. J. Gordon Daves, who is serving on the Advisory Council. Dr. Daves is one of the vice-presidents of the State Medical Association, and husband of our Auxiliary President.

The meeting was delightful and informative, and the only regret was that all who

had planned to be there could not because of the weather.

PROGRAM SUGGESTIONS

(As Given by Mrs. Harry F. Pohlman, Program Chairman of the Woman's Auxiliary to the American Medical Association)

The suggested material is not new and this committee realizes that programs must be tailored to fit individual tastes of the group's membership. However, programs worth giving time to are those which provide education for future living and information with which to meet current problems.

The formative years of our Auxiliary have laid a firm foundation on which to build our projects, and we take pride in the progress made during those years, but we must each year become more purposeful and meet our opportunities and responsibilities.

Due to the present crisis we must be prepared to make our programs flexible, maintain an active Public Relations Committee and an alert Legislative Committee to be on the lookout for any so-called "fringe bills," and study and promote Today's Health. Programs must have entertainment but the percentage of entertainment offered must not exceed instructive programs which will reflect the principles of our organization and the medical profession.

Know your community, study and support your local health agencies, show constructive interest in community health and school health education. Help secure speakers from the Speakers' Bureaus of your State and County Medical Societies for groups and organizations to which you belong.

Keep posted by reading Today's Health, the National Bulletin, the Auxiliary pages of the A. M. A. Journal, your state and county medical journals, and national and state news letters.

It is recommended that each state and county auxiliary set up a reading and clipping committee to clip and read articles pertaining to any part of medicine, and set aside a meeting where such matters can be discussed.

This material should be used for all fall programs in carrying the message to every organization and lay person possible. If

each Auxiliary member does her bit to "promote better health the American Way," then our reports at the close of 1950-51 will be most gratifying.

DUTIES OF PROGRAM COMMITTEE

The duties of the Program Committee, as defined in Chapter IV, Section 9 of the By-Laws, are to familiarize itself with the work of the Auxiliary and of the American Medical Association, and suggest an authentic health literature outline and programs for the constituent Auxiliaries and their component County Auxiliaries. Each Auxiliary should adopt or promote that portion of the program which is most adaptable to the community in which it functions. Program in this sense encompasses all Auxiliary activities. It attempts to prepare members for their responsibilities, to fulfill purposes which provide a reason for our existence, and to meet our objectives as defined in our Constitution.

Preparedness can well be the keynote of the 1950-51 program of the Woman's Auxiliary to the American Medical Association. Armed with the knowledge of how each Auxiliary can best serve its Medical Society and community, Auxiliary members collectively and individually can do much to promote physical fitness and preserve freedom of the American way of life.

One of our greatest responsibilities as Auxiliary members is to disseminate the authentic information which we have available (under the guidance of our respective Advisory Councils) to lay members of women's organizations such as the American Association of University Women, Federation of Women's Clubs, Parent-Teacher Associations, Nurse Associations and Hospital Auxiliaries. Collectively and individually, it is our responsibility to help communities have a better understanding of medicine and its scientific achievements.

We should make an inventory of our capabilities, assume our responsibilities, and stand united and ready to serve our Medical Societies and communities, to help preserve freedom and save human lives.

BASIC OUTLINE PROGRAM MATERIAL

For State Auxiliaries and Their Component County Auxiliaries

1. Twelve Point Program of the American Medical Association for the advance-

ment of medicine and public health: May be secured from Bureau of Health Education, 535 N. Dearborn St., Chicago 10, Ill.

- (1) A Federal Department of Health
- (2) Medical Research
- (3) Voluntary Insurance
- (4) Medical Care Authority with Consumer Representation
- (5) New Facilities
- (6) Public Health
- (7) Mental Hygiene
- (8) Health Education
- (9) Chronic Diseases and the Aged
- (10) Veterans Medical Care
- (11) Industrial Medicine and Accident Prevention
- (12) Medical Education and Personnel

2. The A. M. A.: Its history, function, work of the various councils, bureaus and other departments. Secure pamphlets from the Auxiliary Central Office.

3. Community Health Councils: A. M. A. pamphlets available, Central Office.

4. Study legislation, local, state and national, which affects health and medicine. Material may be obtained from your State and County Medical Societies.

5. Voluntary prepayment medical and hospital care plans from State and County Medical Societies. Familiarize yourself with the plan used in your State and County.

6. State Board of Health: Material from your State or County Health Departments. Study services available.

7. Local health department: Study services available in city and county.

8. School health program: Auxiliary central office.

9. Rural health problems and their proposed solutions: State or County Medical Societies.

10. Nurse recruitment: National League of Nursing Education, 1790 Broadway, New York 19, New York. Methods and information available.

11. Radio and television programs of the A. M. A.: Presented by the Bureau of Health Education, A. M. A. 535 North Dearborn St., Chicago 10, Ill.

12. School of instruction outline: Bulletin, May 1950.

13. Familiarize members on Council with the organization and function of the National Emergency Medical Service of the A. M. A., August 1950 Bulletin—Civilian Defense Program.

SOME DO'S AND DON'T'S FOR THE YEAR AHEAD

Do vote.
Do remind our doctors to vote.
Don't forget to interest others in voting.
Do use the Auxiliary Pledge of Loyalty at your meetings.

Don't use the insignia of other clubs.

Do plan programs relating to health and health education.

Don't use program topics typical of any club; you are an Auxiliary to your Medical Society.

Do plan your program for the year.

Don't operate on a month-to-month basis.

Do send a copy of your annual program to your National Program Chairman to display at the fall Board meeting in Chicago.

Don't Forget To Do This

Do keep a file of program material for your successor.

Don't waste the material.

Do attend meetings and take an active part in the program.

RESOLUTIONS

Adopted at 1950 Convention
San Francisco, June 26-30

WHEREAS, It is evident that existent trends toward socialism in governmental affairs call for a return to the fundamentals upon which this democracy was founded; and

WHEREAS, It has been brought to our attention that not all of the states in the Union require the study of American history for the first grade through the colleges; and

WHEREAS, Knowledge of the pledge of allegiance to the flag, the Declaration of Independence, and the Constitution of these United States creates in youth an awareness of our heritage of freedom; therefore be it

Resolved by the Woman's Auxiliary to the American Medical Association, That our Advisory Council be petitioned to request that state auxiliaries stress within their respective communities the inclusion of the aforementioned subjects in school curricula.

* * *

WHEREAS, The American Medical Association has set forth a 12 point program for the advancement of medicine and public health; and

WHEREAS, The Auxiliary is desirous of preserving the present high standard of medical care in these United States; therefore be it

Resolved, That the Woman's Auxiliary to the American Medical Association will wherever possible implement that program.

REVISED
CONSTITUTION AND BY-LAWS
FOR
WOMAN'S AUXILIARY
TO THE

MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

ARTICLE I.—NAME

This organization shall be known as the Woman's Auxiliary to the Medical Association of the State of Alabama.

ARTICLE II.—OBJECT

The objects of this Auxiliary shall be:

1. To assist the Medical Association of the State of Alabama.
2. To advance the cause of preventive medicine.
3. To secure adequate medical legislation.
4. To promote good fellowship among physicians' families.
5. To assist in entertaining the state, county, and district conventions.
6. To accomplish supplemental work as may be suggested by the Medical Association.
7. To establish and maintain an endowment fund.

ARTICLE III.—COMPONENT AUXILIARIES

Component auxiliaries shall be those County Auxiliaries authorized by the respective County Medical Societies.

ARTICLE IV.—MEMBERSHIP

The membership of this Auxiliary shall consist of all members of Component Auxiliaries in good standing and of members-at-large.

ARTICLE V.—OFFICERS AND METHODS OF ELECTING

Section 1.—The officers of this Auxiliary shall be a President, President-Elect, First, Second, Third, and Fourth Vice-Presidents, Recording and Corresponding Secretaries, Treasurer, Auditor, Finance Officer, Parliamentarian, and Historian.

Section 2.—These officers, with the exception of the Parliamentarian and Corresponding Secretary, shall be elected at the annual meeting to serve for one year. The Parliamentarian and Corresponding Secretary shall be appointed by the President. All officers, with the exception of the President, are eligible for reelection. Due to the office of President-Elect, the President cannot succeed herself, but is eligible to the office some other year.

ARTICLE VI.—GOVERNMENT

This Auxiliary shall be under the supervision of the Woman's Auxiliary to the American Medical Association.

ARTICLE VII.—MEETINGS

The regular meeting of the Auxiliary shall be held at the same place and time as that of the State Medical Association.

ARTICLE VIII.—AMENDMENTS

Section 1.—This Constitution may be amended by any annual meeting provided written notice has been sent to each County Auxiliary two months prior to the state meeting.

Section 2.—All such proposed amendments shall be submitted in writing signed by two members.

Section 3.—Two-thirds of the total votes cast shall be required for amendment.

BY-LAWS

ARTICLE I.—MEMBERSHIP

Section 1.—A woman is eligible to membership in this Auxiliary who is the wife of a physician in good standing in the Medical Association of the State of Alabama or who is the widow of a physician who was at the time of his death in good standing in the Medical Association of the State of Alabama.

Section 2.—Any woman eligible to membership living in a county in which there is no Auxiliary and wishing to join may make application accompanied by dues of \$2.00 to the State Executive Board. If accepted she becomes a member-at-large of the State Auxiliary.

Section 3.—Members-at-large shall have all the privileges of the Auxiliary except that of holding office and voting. Members-at-large may serve as committee chairmen.

Section 4.—No one may be a member of two County Auxiliaries at the same time.

ARTICLE II.—NOMINATION, ELECTION, AND TERM OF OFFICE

Section 1.—A nominating committee shall be appointed by the President to nominate officers for the following annual meeting. The chairman of this committee shall be the immediate Past President of the Auxiliary and the committee shall be composed of five members, not more than two of whom may be members of the Executive Board.

Section 2.—The consent of the nominees to serve if elected shall be obtained by the nominating committee before placing any names in nomination.

Section 3.—After the report of the nominating committee, if there are no nominations from the floor, the ballot may be dispensed with and nominees be elected by acclamation. If there are nominations from the floor the election shall proceed by ballot and a majority of votes cast shall constitute an election.

Section 4.—No member shall be eligible to hold an elective office unless she has been a member of the Auxiliary for one year. No member shall be eligible for the office of President-Elect unless she has been a member of the Executive Board for at least two years. The out-going President-Elect shall be nominated for President.

Section 5.—The term of office of all officers shall begin at the close of the annual meeting at which they are elected.

Section 6.—The President shall fill all vacan-

cies occurring in office for an unexpired term by appointment.

Section 7.—In case of removal or resignation of the President, the First Vice-President shall automatically become President, the Second Vice-President shall become First Vice-President, the Third Vice-President shall become Second Vice-President, the Fourth Vice-President shall become Third Vice-President, and the vacancy in the office of Fourth Vice-President thus occurring shall be filled by the President.

ARTICLE III.—DUTIES OF OFFICERS

Section 1.—The President shall preside at all meetings of the Auxiliary and Executive Board; she shall appoint all standing and special committees and shall be a member ex officio of all committees; and she shall perform such other duties as shall be delegated to her in this Constitution and By-Laws.

Section 2.—The President-Elect shall be an ex officio member of the Executive Board. She shall act as Chairman of the Organization Committee. She shall familiarize herself with all phases of Auxiliary work in preparation for the office of President.

Section 3.—Each of the four Vice-Presidents shall be responsible for organization of specific territory assigned to her by the Executive Board. The Vice-Presidents, with the President-Elect, shall constitute the Organization Committee.

Section 4.—The Recording Secretary shall keep in permanent form the minutes of the meetings of the Auxiliary and Executive Board. She shall keep an alphabetical roll of members, a list of committees, and notify committees of appointments.

Section 5.—The Corresponding Secretary shall read communications in meetings, conduct the correspondence, and notify members of meetings.

Section 6.—The Treasurer shall be custodian of the funds of the Auxiliary. She shall disburse monies upon the order of the President who shall issue vouchers on the Treasury by authority of the Executive Board. She shall make a complete financial report at the annual meeting of receipts and disbursements. The Treasurer shall be a member of the Finance Committee.

Section 7.—The Historian shall compile for permanent record the history of this organization, including its annual meeting.

Section 8.—The Finance Officer shall be Chairman of the Finance Committee.

Section 9.—The Auditor shall examine and audit books and vouchers of the Treasurer and shall present a written report at the annual meeting.

Section 10.—The Parliamentarian shall decide all questions of parliamentary procedure.

Section 11.—All officers shall present a report of their respective offices at the annual meeting.

ARTICLE IV.—EXECUTIVE BOARD

Section 1.—The officers, all committee chairmen, and presidents of County Auxiliaries shall

constitute an Executive Board of which the Auxiliary President and Secretaries shall be respectively chairman and secretaries.

Section 2.—The Executive Board shall have general supervision over the affairs of the Auxiliary.

Section 3.—Regular meetings of the Executive Board shall be held immediately before and after each annual convention of the State Auxiliary, and upon the call of the President. One meeting shall be held in the fall. A notice of these meetings shall be sent to each member of the Executive Board at least two weeks before the convention. The post-convention Executive Board meeting of the Auxiliary is to be announced from the floor after the election of officers.

Section 4.—Special meetings of the Executive Board may be held at the call of the President or upon the request of eight members of the Board. Notice of such meetings shall be given members of the Board two weeks in advance of the date of the meeting.

Section 5.—The Executive Board shall have power over the affairs of this Auxiliary during the interim of meetings except that of modifying any action heretofore taken by the Auxiliary.

Section 6.—During the interim of meetings of the Executive Board, urgent business may be transacted by mail.

ARTICLE V.—FINANCE

Section 1.—Each component Auxiliary shall pay dues to the State Auxiliary at the rate of \$2.00. All dues must be in the hands of the Treasurer by March 1st. Of this amount, \$1.00 is sent to the Auxiliary to the American Medical Association.

Section 2.—The State and County Treasurers shall use the form of receipt prescribed by the National Auxiliary.

Section 3.—The fiscal year of this Auxiliary shall be from March 1st through February 28th. The President may have the privilege of extending the time through May 31st in order that she may have ample time to complete her reports.

Section 4.—County Auxiliaries organized after January 1st of the State Auxiliary fiscal year shall be required to pay only the amount of the National per capita tax for that year. The annual dues assessed by the County Auxiliary will thereafter begin with the County Auxiliary's fiscal year.

ARTICLE VI.—REPRESENTATION

Section 1.—Representation of County Auxiliaries at State meetings will be based on amount of dues received by the State Treasurer before March 1.

Section 2.—Each County Auxiliary is entitled to be represented by its president and one delegate and alternate for every thirty paid memberships or fraction thereof.

Section 3.—Credential cards for delegates and

alternates shall be sent by the State Treasurer to the President of each County Auxiliary one month prior to the annual convention. These cards shall be made out in duplicate and signed by the president of the respective County Auxiliaries and one given to each delegate and each alternate. The duplicates shall be sent to the Chairman of the Committee on Credentials appointed to serve for the forthcoming annual convention.

Section 4.—Delegates to the annual convention of the National Auxiliary shall be one delegate and one alternate for every one hundred members or fraction thereof.

Section 5.—The delegates and alternates to the National Convention to which the State Auxiliary is entitled shall be elected at the annual meeting of the State Auxiliary.

Section 6.—The President of the State Auxiliary shall fill all vacancies occurring among the delegates to the National Convention.

ARTICLE VII.—STANDING COMMITTEES

Section 1.—The standing committees of this Auxiliary shall correspond with those of the National and Southern Executive Committee, and shall include:

Public Relations	Bulletin
Legislative	Today's Health
Organization	Doctor's Day
Program	Year Book
Finance	Press & Publicity
Revisions	Social
Memorial	
Research in Romance of Medicine	
Jane Todd Crawford Memorial Fund	
Lettie Daffin Perdue Fund	
Members-at-Large	
Archives & Exhibits	

Section 2.—The chairman of each standing committee shall be appointed by the President, except as otherwise provided for in this Constitution and By-Laws.

Section 3.—Each standing committee through its chairman shall submit a plan of work by June 1st of each year to the President for approval. The chairman of each standing committee shall present a written report of its activities at the annual convention.

Section 4.—The Organization Committee shall consist of the President-Elect as chairman and the four Vice-Presidents. It shall be the duty of each Vice-President to be responsible for an assigned district to encourage organization of County Auxiliaries and to visit personally or by delegate proposed or organized Auxiliaries.

Section 5.—The Program Committee shall consist of the chairman and four members appointed by her. This committee shall consult with the National Program Committee as to suitable programs for county meetings and furnish material for counties asking for help; they shall prepare, with the aid of the President in conjunction with local arrangement committee, programs for annual meetings.

Section 6.—The Finance Committee shall con-

sist of three members: its Chairman (Finance officer), the Treasurer, and the immediate Past Treasurer. It shall be the duty of the Finance Committee to prepare a budget for presentation at the fall meeting of the Executive Board.

Section 7.—The Today's Health Committee shall consist of four members: its Chairman and three members appointed by her, one from each section of the state. It shall be the duty of this committee to acquaint itself with Today's Health, the Health Magazine, published by the American Medical Association, to inform itself regarding its publication and to further in all ways its usefulness and circulation.

Section 8.—The Committee on Revisions shall consist of a chairman and two others appointed by her, whose duties shall be to receive and consider suggestions for proposed amendments to the Constitution and By-Laws and present them for consideration to the Executive Board and the members of the Auxiliary for final action.

Section 9.—The Press and Publicity Committee shall consist of three members: a chairman and two others appointed by her. Each member shall be from a city in the state that annually entertains the state convention. This committee shall prepare all notices of state interest for the press, attend to their publication and clip and file notices in a scrap book. The Chairman shall be custodian of the Scrap Book.

Section 10.—The Social Committee shall consist of three members, one of whom shall be a resident of the city where the next annual convention will be held. This committee shall work in conjunction with the local committee on arrangements and program for the annual convention.

Section 11.—The Memorial Committee shall consist of three members: its Chairman and two others appointed by her. It shall be the duty of this committee to communicate with the local Auxiliaries, securing names of members whose death occurred during the year; to confer with the Program Committee for a suitable hour on the program for the service and to arrange the memorial service.

Section 12.—The object of the Committee on Research in Romance of Medicine shall be to collect relics for a doctor's shop, this collection to be stored in the Department of Archives and History in Montgomery with the consent of the Director. This committee shall cooperate with the corresponding committee in the Southern Medical Auxiliary.

Section 13.—The object of the Jane Todd Crawford Fund Committee shall be to cooperate with the Chairman of this committee in the Southern Medical Auxiliary.

Section 14.—The object of the Public Relations Committee shall be to inform itself concerning the activities of the medical interests of all clubs, federations, charities, and other organizations; to advise the members of the Auxiliary concerning such activities and the manner in which the trend of such affairs may be influenced for the good of the public and the advancement of medi-

cal science. The Chairman shall work in cooperation with the Public Relations Director of the Medical Association of the State of Alabama, and the Public Relations Chairmen of the County Auxiliaries.

Section 15.—The object of the Legislative Committee shall be to make itself familiar with the legislation of medical interest and to be guided by the advisory committee of the Medical Association of the State of Alabama along legislative lines.

Section 16.—The Archives and Exhibits Committee shall consist of three members, the Chairman, the Historian, and one other member appointed by the Chairman. It shall be the duty of this committee to collect and file all material of national importance of the State Auxiliary for display at the annual meeting of the American Medical Auxiliary.

Section 17.—The Doctor's Day Chairman shall assist local chairmen in making plans for observance of Doctor's Day annually. She shall cooperate with the similar committee in the Southern Medical Auxiliary.

Section 18.—The Lettie Daffin Perdue Fund Chairman shall publicize the use of this fund and solicit contributions from the County Auxiliaries.

Section 19.—The Yearbook Committee shall consist of three members, its Chairman and two others appointed by her. It shall be the duty of the committee to compile and publish the Auxiliary Yearbook.

Section 20.—The Chairman of Members-at-Large shall keep in touch with the members-at-large, with the object of keeping them informed as to Auxiliary happenings and of keeping the Executive Board informed as to their activities. She shall seek to enlist new members-at-large from those counties having no Auxiliaries.

Section 21.—The Bulletin Chairman shall inform Auxiliary members of the worth of the Bulletin, seeking to increase the number of subscribers to the Bulletin.

ARTICLE VIII.—COUNTY AUXILIARIES

A Woman's Auxiliary to the County Medical Society may be formed in any county of the state provided the Medical Society of said county has given its approval.

ARTICLE IX.—ADVISORY BOARD

Section 1.—The Executive Board shall request the State Medical Association to appoint five of its members to act as an Advisory Board to the State Auxiliary. The husband of the immediate Past President of the State Auxiliary shall be requested to serve as Chairman of the Advisory Board.

Section 2.—Projects of any kind shall not be undertaken by the Auxiliary without the advice and consent of the Advisory Board.

ARTICLE X.—QUORUM

Section 1.—Fifteen members shall constitute a quorum for the Auxiliary convention.

Section 2.—Nine members shall constitute a

quorum for the Executive Board meetings.

ARTICLE XI.—PARLIAMENTARY AUTHORITY

"Robert's Rules of Order, Revised" shall be the authority of this Auxiliary in matters not covered by the Constitution and By-Laws.

ARTICLE XII.—AMENDMENTS

Section 1.—These By-Laws may be amended at any regular meeting of this Auxiliary pro-

vided written notice has been sent each County Auxiliary two months prior to said convention.

Section 2.—All such proposed amendments shall be submitted in writing, signed by two members.

Section 3.—Two-thirds of the total votes cast shall be required for amendment.

Section 4.—The Constitution and By-Laws shall be revised at least every four years.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

TULAREMIA

You would hardly call tularemia a major disease in Alabama. Only 12 cases were reported from this state last year. That was an average of exactly one a month. Compared to a number of other illnesses, those dozen reported cases rank small indeed. But tularemia is an important disease nevertheless. To those 12 people who contracted it, it was a major personal problem.

A spokesman for the Illinois State Department of Public Health reminded us some time ago that this is a unique form of illness. For, he pointed out, "its identity and complete description were entirely worked out by Americans." Moreover: "Its very name has been derived from the location in which it was discovered, Tulare County, California. Since the date of this discovery in 1911, all subsequent details of the disease have been brought to light by American men of science."

There is, as always, a story behind that statement. Let us consider it briefly at this time:

In the year mentioned (1911) the residents of that California county became alarmed. Rabbits, wild deer, ground squirrels, and other game were dying in large numbers. Moreover, there was no apparent cause for those wholesale deaths. Like other communities in trouble, the people of Tulare County called for help from a governmental agency, in this case the U. S. Public Health Service. The officials of the Public Health Service quickly responded by dispatching

one of the Service's top-flight medical men to that county. Well known in medical and scientific circles, he was virtually unknown outside them. His name was Dr. George W. McCoy.

Dr. McCoy was a hard worker. Moreover, he was an intelligent worker and a wise planner of his work. He made many investigations. Answers were sought to numerous questions that troubled his inquisitive mind. And those studious searches for facts soon paid off: He won a considerable measure of success. He succeeded in finding and identifying the particular germ which caused the disease responsible for those animal deaths. Like the polar explorer who finds an Arctic or Antarctic mountain, he had the duty and responsibility of naming this new discovery. The most appropriate and most suitable thing to do, he concluded, was to name it after the county where it had been found. And, so it entered the medical dictionary as *Pasteurella tularensis*. It is more widely known simply as *Bacterium tularense*. As far as the writer knows, no other county in the United States, or indeed the entire world, has given its name to a disease-causing organism.

But the story of the conquest of tularemia did not begin and end in that California county. It is one thing to find the cause of a disease in animals. It is quite another thing to save human lives threatened with a disease.

The scene in our tularemia drama shifted to another state, Utah. The time was about the same as that of the other scene. For, while Dr. McCoy was asking himself, and seeking answers to, those questions not far from the Pacific Ocean, another physician in

the interior state was working on a somewhat similar problem among Utahans. The symptoms and general conduct of a strange new disease—new to him at least—were giving him considerable concern. Six cases of the puzzling malady had been reported. All of its victims were human. And he learned that all of them had been bitten by a blood-sucking fly. Known as the deer-fly, it was found on horses.

Further studies were carried out on both diseases. And this brought the diligent truth-seekers to an important conclusion: The two forms of illness—one affecting rodents and other animals in California, the other affecting people in Utah—were one and the same. So the human form of the disease was also named tularemia.

The research continued. And new bits of knowledge were added to the old. One of the most significant was that many types of animals were—and of course still are—susceptible to tularemia. The wild rabbit is the chief reservoir of human infection, especially in this part of the country. Indeed, it is estimated that 90 per cent of all human cases are traceable to rabbit infection. But you are by no means safe from tularemia simply because you do not have anything to do with wild rabbits. For you and others may also get this disease from ground squirrels, rats, mice, opossums, gophers, chipmunks, porcupines, beavers, woodchucks, grey foxes, young coyotes and even sheep. Strangely enough, certain fowls are also said to be capable of getting tularemia. This means that they are also capable of transmitting it to you. Among those under indictment in this way are grouse, sage hens, pheasants and quail.

Perhaps you keep rabbits in your backyard. Or maybe your youngster does. If so, probably you are wondering if you should get rid of them to avoid tularemia. There is no need for that. Remember that it is not the rabbit, or chipmunk or porcupine *per se* that gives people tularemia. Until it becomes infected with the already-mentioned germ that Dr. McCoy discovered some 40 years ago in California, it cannot give you or anyone else tularemia. And the only way an animal or bird can become infected is to be associated with an infected animal or bird. Since your domestic, back-

yard rabbit is kept away from likely sources of infection, there is practically no danger of its getting the germ. So don't worry about that. It's the wild rabbit that you should think about when you think of tularemia.

The wild rabbit of course is a real danger. It gets the infection from being bitten by an infected insect, usually directly from the body of a tularemia-sick animal. The germs thus admitted into the body begin multiplying with rabbit-like rapidity. They also travel rapidly to many parts of the body. For some reason, however, they have a strong tendency to concentrate in the spleen and liver. In those two areas especially, they cause a decay of the tissue cells. When that occurs, innumerable scars form. These cause the formation of white, yellowish spots, which vary in size from a needle point to the head of a pin. Another noticeable physical change also occurs after a rabbit has been infected with tularemia germs: There are enlarged glands, or kernels, in the groin and under the forelegs. Still another physical change occurs in the rabbit's fur. No longer soft and pleasant to stroke, it becomes rough and disagreeable to the touch.

But there is a much more conspicuous change than either of those that have been mentioned: It has to do with the animal's movements. No longer running away from danger with Brer Rabbit speed, the tularemia-sick rabbit is virtually slowed to a walk. In the early stage, he may be able to hop along at a fairly rapid gait. But, even at that stage, he appears sluggish and slow-moving. In the later stages, or when he gets a severe case of tularemia, he may be able to do little more than crawl. It is an easy matter to catch him. Even a child can run one down.

As already indicated, humans get tularemia from infected animals, especially rabbits and birds. With a few exceptions, they get the infection from handling the carcasses. The danger is the same whether the animal, or bird, is dead or alive. A certain number of human cases also result from eating infected rabbit meat which has not been properly cooked.

You have a strong defense against tularemia infection, as you have against other infections—one that you hardly realize you have. That is your skin. As long as there

are no broken places in it, there is no danger of your getting tularemia. (By the same token there is no danger of your getting certain other infectious diseases.) For no disease organism can get through that tough barrier. But don't depend upon your skin too much. For remember what was just said about its being unbroken. That's the important thing. If it contains even a slight pinprick, it is not the strong, effective wall against infection that it needs to be. If you scratch your hand on a briar just before you handle an infected rabbit carcass, there is an excellent chance of your getting the disease. Even if the break is so small you cannot see it, or so slight you feel no pain, that wall of protection has been breached.

The period between infection and the appearance of symptoms differs from case to case. Sometimes it is as little as two days. At other times, it is longer, up to four days or more.

Even when they appear, tularemia symptoms may not make the victim think of tularemia. For they often are misleading. They may be strongly suggestive of other forms of illness. But be suspicious of tularemia if you have reason to think you have been exposed to infection just before certain physical changes occur. These changes include headache and chills. Often the tularemia victim has vomiting spells. He feels aches and pains all over his body. If he takes his temperature—which he is not likely to do unless he has reason to think there is something wrong with him—he is almost certain to find that he has some fever. As the disease progresses, that fever becomes more intense. And those other symptoms are also intensified in the later stages—the aches and pains, the chills, etc. In most cases, but not always, a sore appears at the site of the infection. (That of course is where the germ entered the body. It may be the back or palm of the hand, or the point of a finger. It is the place where a broken bit of skin came into contact with the carcass of a rabbit or other animal or bird suffering with tularemia.) Later that sore becomes much more painful, developing into a flaming ulcer. There is a sharp enlargement of the lymph glands under the arms and elbows. They also become painful. They feel tender when you or someone

else touches them. In many cases they discharge pus over a period of several weeks.

Like a number of other painful and troublesome diseases, tularemia is seldom fatal. That is especially true if the victim receives fairly prompt medical care. (There were no tularemia deaths in Alabama in 1949. There was one in 1948, however, and deaths from this disease averaged one a year between 1944 and 1948, inclusive.) In spite of the disease's relatively low death rate, it, nevertheless, is troublesome. It may involve a prolonged period of invalidism or semi-invalidism. It may keep the victim away from his work for a long time, with consequent heavy financial loss for him and his employer. It can run up a sizeable doctor's bill. In brief, it can, and sometimes does, bring a great deal of pain, worry and trouble generally.

Fortunately, the victim's outlook is much more promising now than it was until relatively recently. That prolonged period of convalescence formerly seemed an inevitable part of the average case, in spite of the best one's doctor could do. But one of the so-called "wonder drugs"—streptomycin—has been found effective in most cases, although there is some division of medical opinion regarding its value. For this gift to tularemia victims, society is indebted to Dr. Selman Abraham Waksman. Until he added streptomycin to your doctor's strong aides, Dr. Waksman was a relatively obscure soil chemist. The majority medical opinion regarding streptomycin's place in the tularemia picture seems to be the same as that of a spokesman for the Illinois Department of Public Health. Said he: "The duration and severity of illness and the number of deaths attributed to this disease appear to be greatly decreased when streptomycin is used."

Nevertheless, streptomycin is not the complete answer to tularemia. Even if it were a cure for every case—which it certainly is not—its use would still be restricted by its cost. For this is a pretty expensive drug. Too, some patients have severe reactions to it, making its continued use highly inadvisable.

So the best thing to do about tularemia—and the wisest—it not to get it. Fortunately, that is not particularly difficult. And being careful to avoid it does not mean any

diminution of your enjoyment of rabbit-hunting. Here are a few suggestions:

(1) Don't shoot the instant you see a wild rabbit, however much you may be tempted to do so. Watch its movements. If it is sluggish and slow-moving, either let it go or shoot it (for the protection of others) and bury it with care to avoid infection. (2) Make it a rule to wear rubber gloves when handling rabbits and other animals. This should be done even if you do not have any reason to think they have tularemia. You never can be sure, and it's best to play safe. (3) Even when you have worn rubber gloves, be sure to wash your hands carefully after handling rabbits, dead or alive. (4) Keep your hands away from your face while handling wild rabbits. (5) Watch out for fleas and ticks that may be infected with tularemia germs. Don't let them bite you at any time. (6) If there is no way to prevent a broken place in your skin from coming into contact with a wild rabbit, soak it thoroughly in a good disinfectant. You should be warned, however, that you may still get tularemia. For this is only half-way protection. (7) See that the rabbit meat you eat and serve your family is cooked thoroughly. Heat kills tularemia germs, as well as others. See that the meat has been cooked until all the red juices have been cooked out. (Be sure that no juices are left around the bones after they have been cooked out of the rest of the meat.)

Surely being reasonably careful is a small price to pay for safety against tularemia. Not being careful enough may demand a vastly higher price.

Veratrum Viride in Hypertension—Our observations of the effects of Vertavis in the patients upon whom we have used it lead us to believe that it is probably effective in reducing the blood pressure in a small percentage of cases of hypertensive vascular disease, and in some cases the response to moderate doses of the drug is better than that obtainable with phenobarbital. It is felt that no conclusions as to its value for prolonged periods can be drawn nor does there appear to be, from inspection of this group of cases, any particular type of patient, or variation of hypertensive disease which is especially responsive to administration of Vertavis.

Previous reports of its use in hypertensive patients make important the warning that it may well produce toxic effects, in varying dosages; therefore care in administration, and observation of the individuals in whom it is used is advisable. —Meador et al., *J. South Carolina M. A.*, Oct. '50.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

AUGUST 1950

Examinations for diphtheria bacilli and Vincent's	218
Agglutination tests (typhoid, Brill's and undulant fever)	1,484
Typhoid cultures (blood, feces and urine)	500
Examinations for malaria	1,133
Examinations for intestinal parasites	4,385
Serologic tests for syphilis (blood and spinal fluid)	31,695
Darkfield examinations	10
Examinations for gonococci	1,994
Examinations for tubercle bacilli	3,183
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	66
Water examinations	1,622
Milk and dairy products examinations	3,908
Miscellaneous	1,485
Total	51,683

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1950

	July	Aug.	E. E.* Aug.
Typhoid and paratyphoid	15	6	18
Undulant fever	6	1	9
Meningitis	5	7	7
Scarlet fever	15	18	38
Whooping cough	116	80	88
Diphtheria	10	16	38
Tetanus	1	2	4
Tuberculosis	251	213	255
Tularemia	0	0	1
Amebic dysentery	2	4	2
Malaria	11	15	321
Influenza	15	21	39
Smallpox	0	0	0
Measles	89	17	37
Poliomyelitis	74	71	24
Encephalitis	2	0	1
Chickenpox	11	4	4
Typhus	19	15	57
Mumps	60	38	27
Cancer	367	406	218
Pellagra	4	0	2
Pneumonia	117	122	117
Syphilis	1384	634	1695
Chancroid	14	5	14
Gonorrhea	464	380	653
Rabies—Human cases	0	0	0
Positive animal heads	35	18	0

As reported by physicians and including deaths not reported as cases.
*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

SCHOOL WATER SUPPLIES

Contributed by

C. W. White, M. S. in S. E.

Prin. San. and Pub. Health Eng.

During the school year 1949-50 a school-to-school survey was made of every school in the state. The type and condition of the sanitation, water supply, hand washing and drinking facilities were reported. The surveys were made by county sanitation personnel in counties where this personnel is available. Other counties were surveyed by engineers with the Bureau of Sanitation. In the main these surveys will be found to be accurate though it is possible that a small percentage of errors may exist.

The results of the conditions pertaining to the water supplies, with the exception of the schools in Jefferson and Perry Counties, are shown in the following tabulation. It is understood that the survey has been made in these counties, but that the results are not available at this time.

Detailed information in regard to each school or each city or county school system may be found in the County Health Department or in the Bureau of Sanitation.

SCHOOL WATER SUPPLIES IN ALABAMA
(BY SCHOOLS)

Number of Schools	
White	1364
Colored	1674
Total	3038
Adequate and Protected Supplies	
White	1025
Colored	327
Total	1352
Percent of Total	44.6
Unprotected or Inadequate Supplies	
White	282
Colored	505
Total	787
Percent of Total	25.9
No Supply on Grounds	
White	57
Colored	842
Total	899
Percent of Total	29.5

SCHOOL WATER SUPPLIES IN ALABAMA
(BY ENROLLMENT)

Number of Pupils	
White	355,920
Colored	182,621
Total	538,541
Adequate and Protected Supplies	
White	315,973
Colored	97,925
Total	413,898
Percent of Total	76.9
Unprotected or Inadequate Supplies	
White	36,760
Colored	43,734
Total	80,494
Percent of Total	14.9
No Supply on Grounds	
White	3,469
Colored	40,780
Total	44,149
Percent of Total	8.2

The results of the survey clearly indicate that a greater effort should be made by the Health and Education Departments to provide all schools with an adequate and safe water supply. There are 899 schools without a water supply on the ground. It is true that most of these schools are small and that some will be consolidated in the future. There are, however, 44,149 pupils as well as teachers who must carry water to school or procure it from nearby sources.

There are 787 schools serving 80,494 pupils that have supplies that are not properly protected from contamination. Some of these school supplies may be protected with minor improvements while others will require major expenditures.

The responsible officials of the 1352 schools with properly protected supplies should be commended for providing an enrollment of 413,898 pupils and their teachers with properly constructed water supplies. They should, however, see that water samples are collected from the system at least quarterly for bacteriologic analysis. If the reports of these analyses are unsatisfactory, the reason should be determined and the defects corrected.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR JUNE 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During June 1950			June Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	5901	**	**	23.5	24.6	25.2
Total stillbirths	178	**	**	29.3	33.3	33.5
Deaths (stillbirths excluded)	2175	1260	915	8.7	8.3	8.5
Infant deaths:						
under one year	257	127	130	43.6	42.9	40.2
under one month	174	98	76	29.5	30.4	30.9
Cause of Death						
Tuberculosis, 001-019	85	33	52	33.9	33.1	38.3
Syphilis, 020-029	13	5	8	5.2	6.0	7.6
Typhoid and para- typhoid, 040, 041	2	1	1	0.8		0.8
Dysentery, 045-048	3	2	1	1.2	0.8	***
Diphtheria, 055						0.4
Whooping cough, 056	6	1	5	2.4	1.2	3.2
Meningococcal infec- tions, 057	3	1	2	1.2	0.4	0.8
Poliomyelitis, 080, 081	1	1		0.4	0.4	
Measles, 085					4.4	1.2
Typhus fever, 100-108					1.2	
Malaria, 110-117	2		2	0.8		
Malignant neoplasms, 140-200, 202, 203†	214	147	67	85.3	89.0	80.3
Diabetes mellitus, 260	19	13	6	7.6	12.4	15.6
Pellagra, 281	1	1		0.4	1.2	2.0
Vascular lesions of central nervous system, 330-334	254	146	108	101.3	90.2	75.5
Other diseases of nervous system, 300-318, 340-398	37	18	19	14.8	14.8	12.8
Rheumatic fever, 400- 402	5	2	3	2.0	1.6	0.4
Diseases of the heart, 410-443	648	398	250	258.4	224.6	209.6
Diseases of the arter- ies, 450-456	22	15	7	8.8	14.0	10.4
Other diseases of the circulatory system, 444-447, 460-468	24	12	12	9.6	11.6	6.0
Influenza, 480-483	7	2	5	2.8	3.6	3.2
Pneumonia, 490-493	65	39	26	25.9	20.4	25.2
Bronchitis, 500-502	4	1	3	1.6	0.8	0.8
Appendicitis, 550-553	3	2	1	1.2	3.6	4.0
Intestinal obstruction and hernia, 560, 561, 570	16	8	8	6.4	8.4	4.8
Gastro-enteritis and colitis (under 2), 571.0, 764	21	5	16	8.4	11.6	4.4
Cirrhosis of liver, 581	20	16	4	8.0	4.4	7.2
Diseases of pregnancy and childbirth, 640- 689	19	7	12	31.3	18.8	19.9
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	4	2	2	6.6	3.1	4.6
Congenital malforma- tions, 750-759	27	17	10	4.6	3.6	4.1
Accidental deaths, total, 800-962	156	108	48	62.2	55.5	70.7
Motor vehicle acci- dents, 810-835, 960	64	51	13	25.5	17.2	23.6
All other defined causes	390	217	173	155.5	156.0	199.7
Ill-defined and un- known causes, 780, 793, 795	108	42	66	43.1	50.3	50.7

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the June report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

Exposure of Quacks—Quacks flourish every-where and even have in their coterie the names of prominent persons. When one is exposed, the great majority ask the inevitable question, "Why doesn't someone do something about it?" Unfortunately, the action, if any, is too often left to that "someone." The daily newspapers in the instances already cited have exposed themselves and their employees to considerable risk and rightfully should have the gratitude of their readers.

But others must lend them support, whether through individual exposure or court action. To the list of newspapers which have already contributed space and effort to the constant fight against quackery, there should be added the names of others who should plan campaigns of this kind. The quack usually fears publicity. Unfortunately his injured patients dislike admitting that they have been bilked and are reluctant to testify against him. Hence exposure seems to be the most effective means of combating irrationality in medicine as a menace to public health.

As a follow-up to such campaigns, there have been excellent examples of vigorous prosecution of those exposed as fakers. This is true particularly in Illinois. Unfortunately, however, the courts have not always been as effective as the law-abiding citizens would desire. The statutes provide severe punishment for the theft of one's goods, but it appears at times to be only a misdemeanor to rob a man of his health. The difficulty occurs when courts are loath to impose the maximum penalties when guilty verdicts are returned. Such action on the part of the courts, imposing minor instead of major penalties, is hardly conducive to vigorous enforcement of the law. These penalties merely become license fees to the defendant, enabling him to persist in his nefarious activity.

Of course, the courts cannot move without the necessary evidence, much of which must come from the actions of public-spirited citizens and professionally trained or otherwise expert persons. Physicians can be particularly helpful, as their principles of medical ethics require them to "expose, without fear or favor, incompetent or corrupt, dishonest or unethical conduct on the part of members of the profession" and to "bear their part in enforcing the laws of the community and in sustaining the institutions that advance the interests of humanity."—Ed., J. A. M. A., October 28, 1950.

ANNUAL SESSION

OF THE

ASSOCIATION

MOBILE

APRIL 19-21, 1951

BOOK ABSTRACTS AND REVIEWS

Woman's Surgeon. The Life Story of J. Marion Sims. By Seale Harris, M. D., Professor Emeritus of Medicine, Medical College of Alabama, Birmingham. Cloth. Price, \$5.00. Pp. 432. New York: The Macmillan Company, 1950.

On the front lawn of the State Capitol in Montgomery is a handsome bronze statue of Dr. James Marion Sims. The inscription on the pedestal reads: Father of Modern Gynecology. Probably very few of the many state employees who pass daily up and down the marble steps to the Capitol have any definite idea of who Dr. Sims was and what he did. Dr. Harris has written a biography of Marion Sims that not only is remarkable for the many interesting details of Dr. Sims' life but is written in such a delightful style that the reader becomes more and more engrossed in the story as the book progresses.

It is the story of a country boy born in Lancaster, S. C., January 25, 1813, who, having procured a college education, felt that he had to take up a profession. He chose medicine. After his first two patients died, he became so discouraged that he wanted to give it up but his father urged him to move "West" to Alabama and make a new start. There, despite repeated attacks of malaria and dysentery, he built up a large practice and, finally, after many unsuccessful operations, thirty on Anarcha, he succeeded in curing three slave women of vesicovaginal fistula, a hitherto incurable malady.

Fired by these successes and hoping for better health in a northern climate, Dr. Sims moved to New York. After some discouraging experiences, he succeeded in founding and operating the Woman's Hospital, and the remainder of the book recounts a series of successes both in this country and abroad where he went after the outbreak of hostilities between the North and the South. Dr. Sims' fame and prominence as a surgeon in Paris, London and Vienna, as well as in New York, was something phenomenal. He became probably the most widely known surgeon of his time.

But it is not simply as a biography that the latter part of the book is so fascinating. We must remember that the period of Dr. Sims' professional activity—1840 to 1888—was truly the beginning of modern surgery—the introduction of anesthesia, the germ theory of disease, and of Listerism. Dr. Harris has not only given a most painstaking account of Marion Sims as a man and a surgeon but he has succeeded beautifully in depicting his activities against the background of these exciting events that made the latter half of the nineteenth century so important in surgical history.

During the first part of the book one may feel that Dr. Harris, true to his Celtic love of the

sentimental, dwells too much on Marion Sims' romance with Theresa Jones. But when one sees that this girl, whom everybody thought was so far above young Marion in family, social and financial status, was truly Dr. Sims' helpmate for better, for worse, for richer or poorer, in sickness and health, one realizes that Dr. Harris is simply giving due credit to the influence that this noble woman had on her husband's life.

Dr. Harris has listed in the appendix of the book the biographical sources to which he turned for information regarding Dr. Sims' life and work. This great number testifies to the prodigious research that he indulged in to make this book so accurate and true. As a well told story, *Woman's Surgeon* should be interesting to everyone. Alabamians in particular will all read with pride of Dr. Sims' accomplishments and honors. Every doctor will be fascinated with the historical value of the contents. The young doctor in particular will be entertained and enlightened by the picture he will get of surgical practice in America in the nineteenth century.

The Alabama medical profession should feel proud of counting in its membership an author of such versatility and brilliance as Dr. Seale Harris.

T. Brannon Hubbard, M. D.

Clinical Biochemistry. By Abraham Cantarow, M. D., Professor of Biochemistry, Jefferson Medical College; and Max Trumper, Ph. D., Commander, H(S), USNR, Lecturer in Clinical Biochemistry and Basic Science Coordinator, Naval Medical School, National Naval Medical Center, Bethesda, Maryland. Fourth edition. Cloth. Price, \$8.00. Pp. 642 with 38 figures. Philadelphia and London: W. B. Saunders Company, 1949.

A new edition of any book which is so firmly established as this one is always a welcome event. The authors have always held as their primary aim an effort to translate current biochemical knowledge into clinical practice and to indicate the application of biochemistry in diagnosis and treatment. This fourth edition represents the authors' effort to keep abreast of the rapid advances which are continuously being made.

Large sections of the previous material have been extensively revised. In particular the section on renal and respiratory regulation of acid-base balance; pigment metabolism in relation to jaundice; carbohydrate, lipid and protein metabolism; thyroid function; adrenal function; absorption and storage of iron; action of parathyroid hormone; renal physiology; vitamins; and experimental diabetes.

Recent advances in biochemistry have dictated the addition of sections on chemical changes in

shock; thymol turbidity and flocculation; fatty liver; the crush syndrome; potassium in treatment of diabetic coma; alarm reaction; and new methods of studying adrenocortical function.

This volume continues to be one of the most valuable biochemical reference books in the doctor's library. The authors did not restrict themselves to stereotyped laboratory procedures but offer sufficient discussion of the underlying physiology, the laboratory tests, and the interpretation of the findings as to make this a complete reference work handy and useful every day as one practices medicine. This volume deserves a place in every clinical laboratory and would prove most helpful to the physician regardless of whether he has his own laboratory.

J. M. Barnes, M. D.

Gynecology: The Teachings of John I. Brewer. By John I. Brewer, B. S., M. D., Ph. D., Professor of Obstetrics and Gynecology, Northwestern University Medical School; Chief of Gynecology and Obstetrics, Passavant Memorial Hospital, Chicago, Ill. Cloth. Price, \$7.50. Pp. 437, with 66 illustrations. New York: Thomas Nelson and Sons, 1950.

As its title implies, this book sets forth the concepts of gynecologic diagnosis and treatment as used by the author in his teaching and practice as head of the department of obstetrics and gynecology of the Northwestern University Medical School. It is based on "the thinking and practices of a single group, uncolored by the pros and cons of every aspect of each disease." "Various theories of etiology, speculations concerning the exact character of a lesion, and arguments for and against various types of treatment have been excluded for the most part." So the teachings in this book are in part dogmatic.

The approach to gynecology presented in this book is different from the conventional text. The chapters are set up according to the patient's complaints rather than according to individual clinical or pathologic entities. There are 17 chapters, with such titles as "Asymptomatic Pelvic Tumors," "Pelvic Tumor with Abnormal Uterine Bleeding and Without Pain," "Pelvic Tumor with Abnormal Bleeding and with Pain," "Dysmenorrhea," "Sterility," etc.

Differential diagnosis of various conditions causing the patient's symptoms is presented and general recommendations for treatment are outlined. No details or illustrations of operative techniques are included and the preface advises the reader to find this information in other texts. This book is well written and easy to read. The illustrations are mostly photographs of surgical specimens. The photographs of gross surgical specimens are unusually good. All but a few of the illustrations are original.

As a minor textbook, this book accomplishes its two purposes: first, to arrange and present gynecologic conditions in a manner to be used best in diagnosis and treatment; and, second, to present sufficient information about each dis-

ease so that one can learn basic clinical gynecology. No information is presented in this book which is not found in the standard texts on gynecology. It is singular in its approach to the subject in that it emphasizes primarily the patient and her complaints, stressing the physiologic concept of gynecologic disease. This book can be of value to all practitioners who treat women but it cannot, nor is it intended to, replace the usual textbooks of gynecology.

Joe W. Perry, M. D.

A Textbook of X-Ray Diagnosis. Vol. IV (Bones, Joints and Soft Tissues). By 11 British Authorities. Edited by S. Cochrane Shanks, M. D., Director, X-Ray Diagnostic Department, University College Hospital, London; and Peter Kerley, M. D., Director, X-Ray Department, Westminster Hospital. Second edition. Cloth. Price, \$10.00. Pp. 592, with 553 illustrations. Philadelphia and London: W. B. Saunders Company, 1950.

W. B. Saunders Company is to be congratulated on publishing this second edition of a set of books which is a standard reference work in x-ray diagnosis. Roentgenologists quote with respect from "Shanks" or, as also known, from the "British Authors."

This volume IV is the first of four volumes. Subsequent volumes on chest, head, neck, and abdomen are to be forthcoming. Originally, the "British Authors" was published in 1939 as three volumes. Although reprinted often, this is the first complete revision.

Volume IV is devoted to bones, joints, and soft tissues. There are numerous contributors. Included in the volume is a discussion of the roentgenology of normal bones and joints. This is followed by sections on congenital deformities, traumatic lesions, inflammatory diseases, and constitutional diseases. There is a concise discussion of bone tumors and cysts.

The book is written in a clear succinct style. The illustrations are very clear and demonstrate the more common lesions and diseases which are encountered in roentgen diagnosis. It is a textbook, and not a monograph. Its purpose is to provide a comprehensive survey of x-ray diagnosis, and it accomplishes its purpose very well indeed.

Although this is a work of British authors, the bibliography shows frequent references from American sources, and the American Journal of Roentgenology and the Journal of Radiology are frequently quoted. Hence, here is a reference book which gives the latest information in x-ray diagnosis, using American and Continental data.

The style of presentation of each subject is didactic. A discussion of clinical features is followed by a discussion of radiological features and then differential diagnosis.

The section on fractures and dislocations discusses fundamental principles which are so important for a basic interpretation of x-ray films of traumatic lesions—not only a discussion of how a particular fracture may best be demon-

strated but also an understanding of the mechanism of how the fracture occurred and how it repairs. Complications of injuries and late results are discussed. This section has been expanded from twenty pages in the first edition to one hundred pages in this revision. The principles of fracture and dislocation x-ray diagnosis which are discussed represent the basic knowledge which anyone should have who is interpreting roentgenograms. For example, to know that a rib may be fractured not only by trauma but also as a late result of heavy dosage of x-rays for treatment of a breast carcinoma.

There is a discussion and illustrations of the various types of osteochondritis. These conditions may easily be mistaken for fractures or infections of bone.

Bone tumors and cysts are discussed from these radiologic features. There is a purposeful omission of correlations with blood chemistry studies. But the reader can learn the characteristics of the benign and malignant tumors.

There is an excellent discussion of soft tissue radiology. The various types of calcifications are discussed; also soft tissue findings associated with trauma, parasitic diseases and ossifications.

This is a volume which represents the principles of roentgen diagnosis of bone and joint pathology; and the effects of injury, congenital deformities, infection, and constitutional diseases on bones and joints. The book should be read and studied by anyone who is responsible for expressing an opinion on a roentgen film of bone and joint diseases. It is an easy book to read, contains no irrelevant material, excellently illustrated and is exceedingly accurate. This second edition brings a famous text up to date. It is a book for every roentgenologist and orthopedist, and useful for the surgeon.

Howard J. Goldstein, M. D.

Handbook of Materia Medica, Toxicology, and Pharmacology. By Forrester Ramon Davison, B. A., M. Sc., Ph. D., M. B., Consultant and Toxicologist, Minneapolis, Minnesota; Formerly Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock; Medical Department, The Upjohn Company, Kalamazoo, Michigan; Assistant Professor of Pharmacology, University of Tennessee Medical School, Toxicologist to University Clinics, Memphis, Tennessee. Fourth edition. Cloth. Price, \$8.50. Pp. 703, with 35 illustrations, including 4 in color. St. Louis: The C. V. Mosby Company, 1949.

This volume represents the fourth edition of an already well established work. At the same time it is in a sense a first edition since the previous three editions appeared in the so-called "Synopsis Series." The success of the earlier editions led to enlargement of the work so that this fourth edition appears as a larger "Handbook" series.

This edition continues to emphasize the correlation between basic science and clinical medi-

cine. The author is quite adept at bridging the gap between basic information relative to drugs and their actual therapeutic use. His skill in this direction makes this volume easy to read for the busy practitioner.

As always, the essentials of pharmacy are presented in discussing various drugs, and the old art of prescription writing is given new impetus. Significant new drugs are discussed, including aureomycin, antithyroid drugs, antihistamines, rutin, BAL, "nitrogen mustards," blood fractions, radioactive phosphorus, and many more. There is also new information on hormones and vitamin derivatives. These factors combine to make this volume a "must" for all doctors who require an authoritative, brief, and well condensed reference on pharmacology.

J. M. Barnes, M. D.

Psychiatric Sections in General Hospitals. By Paul Haun, M. D., Med. Ac. D., Chief of the Hospital Construction Unit, Georgetown University Medical School, Assistant Professor of Psychiatry, Georgetown University Medical School. Cloth. Price, \$4.00. Pp. 80. New York, New York: Architectural Record, 1950.

Those who bear the burden of decision in planning hospital construction would do well to tarry over this book before submitting their plans to the contractors. The need to "generalize" further our general hospitals to include psychiatric facilities can no longer be doubted by those who profess to discharge adequately their responsibilities to the communities to be served. Recent advances in psychiatric therapy command a revision of the attitude that the treatment of the nervous patient shall be relegated to those forbodingly haunting and haunted houses, the sanitarium.

The book is composed of two parts. The first is concerned largely with the psychiatric and administrative considerations of the problem of psychiatric beds in general hospitals. The introduction, by Doctor Karl Mennenger, and the author's text point up the currently held opinions justifying the addition of such facilities at the community level. This is never done angrily or violently, nor is there any evidence of the subordinate of other departments to the needs of the psychiatric section. The author reviews the benefits that accrue in improved and more comprehensive care, in the reduction of patient load on state institutions, in improved liaison between psychiatry and other medical specialties, and in the avoidance of stigma for the patient.

Of perhaps greater value to the hospital administrators and planners, who should have already found the above "truths to be self-evident," are the architectural plans for psychiatric sections. These plans are provided with comprehensive notations, reviewing the defects and merits of each. The inclusion of this section broadens the appeal of this book, not only for those who are directly concerned with the medical and administrative aspects of hospitals, but

also for architects and the allied fields of hospital construction.

The doubtful and the timorous will find considerable difficulty in resisting the unemotional approach to this problem of psychiatric beds in general hospitals. The medical profession, having given the nod to the marriage of Psyche and Soma, in fairness and decency, must demand from municipal authorities proper housing for the young couple, so that a productive consummation of this marriage may serve to benefit the community.

Philip S. Bazar, M. D.

Blood Transfusion. By Elmer L. DeGowin, M. D., Associate Professor of Internal Medicine, State University of Iowa; Robert C. Hardin, M. D., Assistant Professor of Internal Medicine, State University of Iowa; and John B. Alsever, M. D., Senior Surgeon, U. S. Public Health Service. Cloth. Price, \$9.00. Pp. 587, with 200 diagrammatic drawings. Philadelphia and London: W. B. Saunders Company, 1949.

The authors have divided this work roughly into nine parts, dealing with such subjects as the administrative set-up in hospitals; preparation of blood and its derivatives; plasma and plasma substitutes; care of apparatus; and the clinical uses of these substances in treatment. This volume represents the end result of much "boiling down" in that it contains in one volume all the essential information relative to the administration of parenteral fluids, particularly whole blood and plasma. The authors are careful to emphasize that blood transfusions should not be undertaken as a minor procedure but rather should be viewed as a major procedure to be undertaken after careful consideration of the patient's circumstances. This book is heartily recommended to all physicians as a reference work since indications for the administration of some fluids arise almost daily in every physician's practice.

J. M. Barnes, M. D.

Atlas of Roentgenograph Positions. A Practical Reference Book for X-Ray Technicians. By Vinita Merrill, Educational Director of Picker X-Ray Corporation. In 2 volumes. Cloth. Price, \$30.00. Pp. 663, illustrated. St. Louis, Missouri: The C. V. Mosby Company, 1950.

In these two volumes the author has adhered throughout to the title, "Atlas of Roentgenographic Positions," which is generally conceded the most important factor in producing the best of diagnostic roentgenograms. The accomplishment of the above is dependent on the technician, in practically all cases, and with the aid of this textbook, the average technician should accomplish this goal.

The outstanding feature in this work is the excellent illustrations for x-raying the various parts of the anatomy. Adjacent to the pictures is a brief, easily comprehensible explanation which will accomplish diagnostic films of such a quality that the technician will be proud, and the

interpreter well pleased. In addition to this is an economic factor in which the size of the film is given.

The author has concentrated on standard positions, but has realized that all patients do not fit into textbook pictures of standard positions. It is believed that from these illustrations the technician will be better able to adapt the position to atypical cases.

This is an excellent book for quick reference, due to its index which is in chronologic order, and a resume of this on the outside cover.

The sections on positioning and anatomy are both well illustrated by ample drawings and photographs. All the material is well condensed and is presented in an outline form, making it easy to understand.

This work is highly recommended as a very thorough and concise textbook for technician or radiologist.

C. S. Stickley, M. D.

Amusing Quotations For Doctors and Patients. Edited by Noah D. Fabricant, M. D. Cloth. Price, \$3.00. Pp. 149. New York: Grune and Stratton, Inc., 1950.

"Next to being witty yourself, the best thing to do is to be able to quote another's wit," so said C. N. Bovee many years ago. With this thought in mind the editor of this volume has attempted to gather and publish a wide selection of amusing quotations dealing with the various aspects of the medical scene. The activities of the profession have always been the source of much levity and it may prove diverting for physicians to see themselves through the eyes of others.

The quotations are not limited as to age or geographic locations but are gathered from wits the world over and from all ages. The quotations are organized into chapters, or subject headings, for reference and indexing.

This is not the type of book from which one will gather great medical wisdom but is an amusing addition to one's library. It may well serve as a source for that beautiful quip with which one may wish to add sparkle to a talk. It is also a sort of book which may well be kept handy to the patient for his amusement while he sits in solitude. This book is well worth the price asked, and any physician should find a place for this volume in his library.

J. M. Barnes, M. D.

World Surgery, 1950. By Stephen A. Ziemann, M. A., M. D., F. A. C. S., F. I. C. S., Abstract and News Editor, Journal of the International College of Surgeons; Abstracter for International Abstracts of Surgery; and Surgery, Gynecology and Obstetrics. Formerly Assistant Chief, Bureau of Publishers, U. S. Navy Medical Department and Assistant Editor, U. S. Navy Medical Bulletin. Cloth. Price, \$6.00. Pp. 177. Philadelphia: J. B. Lippincott Company, 1950.

World Surgery, 1950 is an abstract of the surgical literature from leading medical journals of

many nations and many languages presented as a very interesting review. The author stresses the rare, the unusual and the unique. Therefore many of the subjects are covered by a few case reports. Emphasis has also been placed on the newer ideas, newer world surgical thinking and newer surgical techniques. Technical details of surgical procedures reviewed are adequately illustrated. All the subspecialties of general surgery are reviewed. *World Surgery, 1950* is informative and thought provoking. The doctor wishing to investigate in more detail will find the exact reference.

Hugh V. Bell, Jr., M. D.

Eyes and Industry (Formerly Industrial Ophthalmology). By Hedwig S. Kuhn, M. D., Industrial Ophthalmologist, Hammond, Indiana. Second edition. Cloth. Price, \$8.50. Pp. 378, with 151 illustrations, 3 in color. St. Louis: The C. V. Mosby Company, 1950.

In this book the author coordinates much of the essential information relating to the main problems that confront industry and which bear a special relation to ophthalmology.

Two types of contacts that ophthalmologists have with industry are (1) as consultant to specific industries and (2) as an oculist practicing in an industrial community.

An intelligent appraisal of industrial eye problems is a detailed visual job analysis. To know what a given pair of eyes must be able to do in order to place new employees according to their visual skills; in order to correct any defect properly for that work; in order to choose the right type of protective equipment, one must see each and every job and enumerate its essential characteristics.

Dr. Kuhn reveals testing procedures in industry as (1) selecting adequate pre-employment tests; (2) providing periodic rechecks of special groups; and (3) conducting a practical visual survey of the plant.

In chapter V Dr. Albert C. Snell presents the newest and pertinent facts about the ophthalmologic aspects of eye injuries.

Dr. Kuhn and Dr. Tiffin at Purdue University have worked out a most valuable regimen of eye protection, proper illumination, visual job analysis, psychology of color vision in industry, all adequately presented in this excellent summary of industrial ophthalmology.

There are eleven chapters and 378 pages in this book. Everything past and present and now under experimentation or investigation related to the problem of the eyes in industry is presented.

This text is a must in the library of all men practicing ophthalmology, and medical men working part or full-time in industrial employment. It would do well for industrial management to familiarize itself with this edition. The illustrations are beautiful and most helpful.

Karl Benkwith, M. D.

A Century of Medicine in Jacksonville and Duval County. By Webster Merritt, M. D. Cloth. Price, \$3.50. Pp. 201, with 44 illustrations. Gainesville: University of Florida Press, 1950.

When Sergeant James Hall, of Keene, New Hampshire, doffed his uniform as a soldier in the Revolutionary War, the thing that seemed most unlikely to happen to him was his becoming the first physician to practice the healing profession in Jacksonville, Florida. But the whirling of time wrought many changes in those days, as at present. Sergeant Hall became Dr. Hall, and Dr. Hall introduced the practice of medicine in what has since become one of the South's most important cities. That was around a century and a half ago.

A medical man of our day tells about him in *A Century of Medicine in Jacksonville and Duval County*. That author, Dr. Webster Merritt, has shown an impressive capacity for gathering historical facts and marshalling them in stately order. For the story of that transplanted New Hampshire Yankee is only one of many which crowd the book to its covers.

There are accounts of other pioneer Florida physicians. There are descriptions of yellow fever and smallpox epidemics that make us glad of and thankful for the progress medical science has made in the past century and more. There is the record of Jacksonville and Duval County men of medicine who fought in the War Between the States—on both sides. (One, who joined the Union Army, had the unusual experience of returning with the Federal troops who occupied the city and took advantage of the opportunity to look for some valuable paintings he had buried. After Appomattox he went back on his own responsibility, unarmed and unescorted, and became even more popular with his fellow physicians and the public than before the war.)

The yellow fever epidemic of 1888 brought Jacksonville to perhaps its darkest days. (Decatur, Alabama, also had one the same year that made yellow fever history and gave the state's first State Health Officer a strong taste of the fruits of honesty and plain-speaking.) An earlier outbreak was still fresh in people's memories. Efforts to keep them calm and suppress the truth about the epidemic only gave nourishment to wild rumors that far exceeded the actual state of affairs. Refugees fled in panic to such places as Waycross and Jessup, Georgia, until those places stopped admitting them. Waycross people showed they meant business by refusing to let the fleeing Floridians pass through at high speed in locked coaches. They even threatened to tear up the railroad tracks, if that should be the only way they could keep Jacksonville refugees away.

But there are pleasant things to tell too, and Dr. Merritt tells them pleasantly. Hospitals were established. The Florida State Board of Health came into being. (Its organization in 1889 was due in part to the yellow fever epidemic of the year before and in part to the efforts of the Florida Medical Association.) As in Alabama and other states, high-minded men—doc-

tors and others—have served the people of the city and county with unselfishness in peace and war, calm and stress.

This volume obviously represents a vast amount of work. Of particular appeal to the people of the Jacksonville area, it also contains much of interest and inspiration for many others.

John M. Gibson

The Law of Medicine. By Parnell Callahan, A. B., LL. B., Member of the New York Bar; and Justine Callahan, A. B., M. D., Assistant Attending Obstetrician and Gynecologist, New York Hospital; Instructor in Obstetrics and Gynecology, Cornell University Medical School; Assistant Attending Obstetrician and Gynecologist, St. Clare's Hospital; Junior Assisting Attending Gynecologist, Roosevelt Hospital, New York. Cloth \$2.00, paper \$1.00. Pp. 80. New York, N. Y.: Oceana Publications, 1950.

This little booklet is a brief summary of the doctor's legal privileges, rights, and responsibilities. It summarizes the requirements for licensure to practice medicine in the various states. It gives the doctor legal advice as to proper method of obtaining consent for operation, abortion, sterilization, autopsy, etc. There is a chapter on the rights of doctors and nurses in the armed forces as pertains to malpractice, licensure, privileged communications, etc. This is a useful handbook to help the doctor solve his medico-legal problems.

Joe W. Perry, M. D.

Plastic and Reconstructive Surgery. A Manual of Management. By Ferris Smith, M. D., F. A. C. S., Consultant in Plastic Surgery, Blodgett Memorial Hospital, Grand Rapids, Mich. Cloth. Price, \$15.00. Pp. 895, with 592 illustrations. Philadelphia and London: W. B. Saunders Company, 1950.

This is a very interesting and instructive manual. However, this highly specialized surgical field, as of necessity, limits the general usefulness of the book to plastic surgeons or doctors who are in the process of training in this field.

It is an excellent guide to the fundamentals of plastic and reconstructive technique. The procedures presented are tried and proven, but there are others that will give equally acceptable results if based on the principles set forth in this manual. Basic surgical principles are very strongly emphasized and the "don'ts" are as important as the things that should be done.

The bulk of the book is devoted to deformities of the head and neck, which includes congenital, traumatic and neoplastic conditions, although an excellent section is devoted to the trunk and extremities. The text is well illustrated with diagrammatic sketches and photographs. By using the step-by-step and stage-by-stage description of operative technique, technical detail is adequate and explicit. Superfluous material has been omitted.

All surgical subspecialties overlap this special-

ty and it is the author's belief that many deformities of the other fields can be handled as well and in many instances better by the respective specialist.

It is a valuable book, well prepared, well written and presented as a basic guide to plastic and reconstructive surgery.

Hugh V. Bell, Jr., M. D.

A Textbook of Gynecology. By Arthur Hale Curtis, M. D., Emeritus Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Formerly Chief of Gynecological Service, Passavant Memorial Hospital, Chicago; and John William Huffman, M. D., Associate Professor of Obstetrics and Gynecology, Northwestern University Medical School; Attending Gynecologist, Passavant Memorial Hospital, Chicago. Sixth edition. Cloth. Price, \$10.00. Pp. 799, with 466 illustrations. Philadelphia and London: W. B. Saunders Company, 1950.

This is the sixth edition of a textbook which, ever since the publication of the first edition 20 years ago, has been the most popular and widely read book in its field. This latest edition brings it as nearly up to date as a textbook can be.

Every phase of gynecology is covered thoroughly. The section on anatomy of the female pelvis and perineum is particularly noteworthy and is the best that can be found in any book. The illustrations are nearly all original and the drawings and photographs are excellent. Most of the drawings are by Tom Jones.

It is not necessary to consider each section of this book or to discuss the merits since previous editions are familiar to most physicians. Suffice it to say that this latest edition of Curtis maintains and continues the high standards of the previous editions. This book is recommended to all physicians as the best and most all-inclusive textbook on gynecology that can be had.

Joe W. Perry, M. D.

High praise for the Army's newest and best equipped hospital, Tripler Army Hospital, near Honolulu, Hawaii, was voiced by Major General R. W. Bliss, the Surgeon General, on his return this week from an inspection tour of the medical services in Japan and Korea.

"In meeting one of the Nation's greatest responsibilities to the men who have borne the battle in Korea, Tripler Army Hospital has played a most important part," General Bliss said.

Aside from caring for its own regular patient load, which recently occupied over 900 beds, Tripler has given an average of two days of rest, comfort, and necessary medical attention to over 5,000 patients evacuated from Korea and Japan to the United States. General Bliss feels that without this vital link in the chain of evacuation, many types of patients would have to remain because their condition would not permit a non-stop flight from the Far East.—*Surgeon General's Office, October 20, 1950.*

AMERICAN MEDICAL ASSOCIATION NEWS

MYSTERIOUS VIRUS DISEASE IN MEDICAL SPOTLIGHT

An especially mysterious virus condition is beginning to take the spotlight in the medical profession's never-ending battle against disease. It is a condition known originally as glandular fever, more recently rechristened infectious mononucleosis, Dr. William Bolton of Chicago pointed out in the October issue of *Today's Health*, a publication of the American Medical Association.

Dr. Bolton, associate editor of the magazine, said there are "plenty of reasons why this disorder should command attention." The actual cause is believed to be a virus but is not exactly known; the way the disease spreads also is unknown.

"Its symptoms are so bizarre and confusing that accurate identification is extremely difficult," said Dr. Bolton. "No entirely satisfactory treatment has yet been developed."

The disease is not new. It has been known since 1889, causing among other disorders a swelling of lymph glands, especially in the neck. It originally was considered a disease chiefly of children, but, like polio, it has "graduated" to other ages.

"The principal signs in the average patient are moderate fever, sore throat, cough, headache and swollen glands," said Dr. Bolton. "You could have those in the start of German measles, in the complications of an ordinary cold (with which it is frequently confused), in a mild form of influenza and a host of other disorders."

"Perhaps even more disturbing than the difficulty of diagnosis is the erratic manner in which infectious mononucleosis travels among the population. First, it is believed that many persons have it without identification ever being made. This would be possible with mild forms of infection, when the victim feels no worse than he would with a severe cold."

"Unsuspected, the virus could be passed on to a dozen friends. But to complete the confusion, not all of those friends would necessarily develop the disease. Some of them might have had it earlier, without knowing it. Others may have a natural

resistance to its effects."

He pointed out its "spotty" nature—"it may develop as a small-scale epidemic in a group of children, yet attack only one child in a family of three or four." It may appear in one section of a town and leap abruptly to some far-removed area.

"There is no rhyme or reason to its wanderings, no common medium such as water or food supplies, unsuspected human carriers who harbor the virus without showing infection, or animal carriers," he said. "It is limited to no special region or season and does not occur as a result of any changes in individual activity or body function."

Two accurate methods of identifying the disease are available, he said. The first is to inspect the white blood cells under a microscope; the second to determine whether the patient's blood serum causes a bunching of red cells taken from a sheep.

During the active course of the disease there is usually no extreme peril to life but the patient may feel worn out and unable to carry on sustained activity for weeks.

Penicillin, chloromycetin, aureomycin and human blood serum have been used in treatment and helpful results have been reported.

"Of course not everyone who feels weak and worn out after an illness can assume that he has had infectious mononucleosis," said Dr. Bolton. "But physicians are finding more and more frequently that infectious mononucleosis is the final picture after they have fitted together the pieces of this jigsaw-puzzle disease."

HAVE A COLD? KEEP IT TO YOURSELF. ADVISES DOCTOR

Keep that cold to yourself by staying away from other people, advises Dr. Donald A. Dukelow of Chicago, consultant in health and fitness for the Bureau of Health Education, American Medical Association.

Dr. Dukelow, writing in the October issue of *Today's Health*, a publication of the A. M. A., pointed out that with the approach of the season of rapid temperature changes, frequent wet feet or wet clothes and increased exposure to infection in closed rooms, there is an increased risk of colds.

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A MEANS OF INCREASING THE NUMBER OF GENERAL PRACTITIONERS

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General practice in many areas of the United States is threatened with collapse. Physicians are not entering this field of medicine in sufficient numbers to nullify normal attrition. Present trends toward excessive specialization must be reversed if the proper ratio of general practitioners to specialists is to be maintained.

The public's traditional respect and affection for the medical profession is largely a result of the work of the general practitioner. Concomitant with the decrease in the number of general practitioners, there has been a definite change in the attitude of the public toward the medical profession. The average layman resentfully complains of difficulty in obtaining medical care and of high medical costs. The scarcity of general practitioners exists particularly among the rural population¹ and many of the complaints of inadequate medical care arise from this group. However, urban dwellers who have no family doctor and who have had difficulty in securing medical care at home, at night, and in emergencies often grumble more bitterly than the rural people. The specialist is not prepared to cope with situations of this type and by the very nature of his training is not an adequate substitute for the general practitioner. Com-

plaints of excessive medical costs are almost universally related to specialists' fees and hospital expenses. The bureaucrats and politicians have seized upon this public unrest as a means of political advancement and are proposing numerous schemes which amount to socialized medicine.

The specialist, by virtue of his extensive training and the difficult character of the cases with which he deals, is entitled to a greater fee per patient than is the general practitioner. However, there is every indication that many patients are now being cared for by specialists when the same service could be accomplished by a general practitioner at less cost and without recourse to hospitalization or extensive use of special types of examination.

In the absence of available general practitioners, hardship is likely to occur. The patient, because of his inability to secure a family physician, is often forced to go directly to the office of a specialist and, in his ignorance of medicine, may select the wrong specialist. It is not unusual for such a patient to be seen by several specialists, at great cost and inconvenience, in order to secure services which could have been rendered by one general practitioner. Indeed, an emotionally disturbed patient with vague, indefinite, psychosomatic symptoms is often passed through the whole gamut of the specialties without receiving as much relief as he might have received from one general practitioner who knew his personal and family history and understood his social

1. (a) Slaughter, D.: Rural Medical Care and General Practice, South Dakota J. Med. 1: 104 (March) 1948.

(b) Davison, Wilburt C.: Rural General Practice in Groups, J. A. Am. M. Coll. 23: 180 (May) 1948.

and economic problems. The public is justifiably resentful when this happens.

Dr. Morris Fishbein is credited with the estimate that 85 per cent of the diseases for which patients consult physicians can be handled with the amount of equipment which can be carried in a hand bag.² A survey of 200 consecutive cases at Winston-Salem, North Carolina, indicated that 84.8 per cent of these cases could be cared for by an individual physician.² Hopkins and Graves have expressed the opinion that 85 per cent of patients can be very adequately cared for by general practitioners.³ In spite of the evident need for more general practitioners, less than 25 per cent of medical graduates plan to enter this field of practice.¹ Furthermore, only one per cent of the physicians returning from military service after World War II indicated a preference for communities of less than 2,000 population.⁴ The acute need in these areas can be met only by more general practitioners.

Even during the economic inflation of these postwar years, the scarcity of general practitioners has been very evident. This will become more acute if a recession or depression develops forcing that segment of the population now relying exclusively on specialists to seek less expensive medical care. An adequate supply of general practitioners is the only answer to the problem of obtaining superior medical care at reasonable cost.

An increase in the number of medical school graduates has been proposed as a panacea for the weakness in our system of medical service. However, no over-all shortage of physicians actually exists in the United States. The physician-to-population ratio in the United States is approximately

one to seven hundred and fifty.⁵ One physician to every one thousand persons should be adequate even in sparsely populated areas. The problem is definitely one of distribution.

Groups composed of representatives from all of the specialties have been proposed as a means of supplanting the general practitioner. Nothing could be more erroneous than this plan. Group practice of specialists cannot exist in sparsely populated areas. In such groups, also, the practice of medicine tends to become machine-like, with a loss of the traditional doctor-patient relationship, and it is as expensive as care by an individual specialist.

A DISCUSSION OF A METHOD FOR INCREASING THE NUMBER OF GENERAL PRACTITIONERS

The best method for increasing the number of general practitioners appears to be that of requiring all physicians to serve a stipulated period of time in general practice before entering specialty training.⁶ This could be readily accomplished through exercise of the full influence of the Council on Medical Education and Hospitals of the American Medical Association. This group is capable of coordinating action by the specialty boards. If the specialty boards refused to recognize specialty training accomplished before completion of a stipulated period of general practice, there would be little question of compliance on the part of prospective applicants for board certification.

After serving a period of time in general practice, many physicians who originally proposed to specialize would undoubtedly remain in general practice. A period of three years has been suggested as a begin-

2. Editorial, *The General Practitioner and His Handbag*, North Carolina M. J. 1: 320 (June) 1940.

3. (a) Hopkins, B. A.: *The General Practitioner and Rural Medical Care*, South. M. J. 39: 106 (February) 1946.

(b) Graves, John H.: *The Role of the General Practitioner*, Ann. West. Med. and Surg. 1: 79 (April) 1947.

4. Woods, A. D.: *The Renaissance of the General Practitioner*, J. Iowa M. Soc. 38: 287 (July) 1948.

5. Smith, M. C.: *Demand and Supply of Physicians for Rural Practice*, J. Omaha Mid-West. Clin. Soc. 9: 6 (January) 1948.

6. (a) Fishbein, Morris: *A History of the American Medical Association 1847-1947*, Philadelphia, W. B. Saunders Co., 1947, p. 74.

(b) Johnson, Wingate, M.: *Will the Family Doctor Survive?* J. A. M. A. 132: 1 (September 7) 1946.

(c) Kracke, R. R.: *Specialization in the General Practice of Medicine*, J. M. A. Alabama, 1948-1949, 18: 124 (November) 1948.

(d) Kenyon, Steve P.: *The Disappearing General Practitioner; Causes, Effects and Remedies*, South. M. J. 41: 620 (July) 1948.

ning for such a program,⁷ and should constitute sufficient time for the physician to become attached to his community and practice. Even if all of those who initially intended to specialize actually returned to specialty training, their contribution of three years of work would still be of material aid to the overworked general practitioners.

The compensation received from general practice would be far in excess of the pittance now paid by teaching hospitals. An increased income would be welcome in this period of a physician's life when he is often in debt and in need of a means of improving his financial status. By associating himself with an established physician, the recent medical graduate could escape the expense of an office and its equipment.

The teaching of medical graduates in the outpatient departments of hospitals is overemphasized and should be complemented by teaching in the offices of general practitioners. No physician can fully realize the importance of social and economic factors in disease from hospital experience alone. This is best learned by visiting patients in the home and becoming familiar with the community, the family, and the individual. In the usual outpatient department, personal relationship between the physician and the patient is replaced by an almost impersonal and mechanical organization. The patient is seldom seen more than twice by the same physician, and the young physician, because of this lack of continuity, fails to learn much of the course of the disease. No one would advocate dispensing with the general internship as it acquaints the medical graduate with those techniques of medicine which are related to the diagnosis and treatment of serious and advanced disease. It is equally important that a physician be thoroughly trained in the diagnosis and treatment of early disease and that he learn more of the common diseases through experience in general practice. Why not teach each phase of medicine where it is best practiced and include general practice in the scheme of medical internship? Instead of teaching medicine in general practice, we have greatly expanded the outpatient departments of

hospitals which, at their best, expose the young physician to only a limited number of the problems which he will later encounter in private practice.

Many hospitals have entered the field of medical practice by employing radiologists and pathologists and dispensing their services as a function of the hospital and not of the medical profession. Under the guise of increasing the amount of teaching material for interns and resident physicians, the scope of outpatient work in hospitals has been vastly expanded. More emphasis on general practice as a means of teaching could do much to remedy this situation.

Supervision by an experienced general practitioner would greatly aid a young physician in grasping the elusive elements of a good bedside manner. This quality in a physician is greatly appreciated by patients and may be an important factor in his success or failure. The relations of the medical profession to the public are the sum total of relationships of the individual physician with the individual patient. An improvement in the bedside manner of young physicians would do much to insure good relations between the public and the medical profession in the future.

Training in the hospital alone places too much emphasis on special diagnostic procedures. Consequently, the specialist, and particularly the young specialist, is inclined to resort to a great number of these procedures and to neglect the less expensive and more valuable history and physical examination. In the difficult cases so often seen in hospitals, special methods of examination are necessary, but in the majority of diseases the diagnosis can be made by a careful history and physical examination. In most cases, special diagnostic procedures are necessary only to confirm the diagnosis. The practice of using a battery of special diagnostic procedures routinely is wasteful and indicates a lack of good medical training. A general practitioner must become an expert in the use of the history and the methods of physical diagnosis as he is sometimes forced to rely on these methods alone. There is every indication that a prospective specialist would profit by this training.

The association in practice of recent medical graduates with established general prac-

7. Johnson, W. M.: Will the Family Doctor Survive? *Diplomat* 19: 1 (January) 1947.

tioners would do much to improve the status of the general practitioner. The teaching obligation implied in this arrangement would be a great stimulus to the older man. The assistance afforded by recent graduates would allow general practitioners much more time for reading and attending medical meetings. It is not entirely unreasonable to assume that the recent graduate would be able to teach the older practitioner something of the newer advances in medicine which might have escaped the notice of an overworked physician. This would apply particularly to the basic sciences which a busy practitioner is too frequently forced to neglect. At the same time, the older physician would thoroughly indoctrinate the young physician in the time-tested, practical phases of medicine.

Many young physicians would undoubtedly go into general practice as a temporary measure if it were easier to return to specialty training at a later date. Under the present system, it is almost impossible to secure a training position in a hospital once the graduate is out of the normal chain of progression from intern to resident physician. If general practice before specialization were the rule, this objection would vanish.

It seems ironic that one spends four years in premedical training in order to secure a broad general education and then makes little effort to secure a broad medical education. Certainly, the good specialist should first be a good general practitioner. My own experience in referring cases to specialists indicates that many of these men have no true concept of the problems of either the general practitioner or his patients. Such men frequently offer advice which is incompatible with the social and environmental conditions of the patient. Experience in general practice would enable such specialists to obtain good results by a slight alteration in their plan of treatment.

Many young physicians enter into a specialty as a result of hero worship for some particular specialist whom they have encountered during their training. By entering into general practice which affords a panoramic view of medicine, the aura of any particular specialist would be dimmed. Under these circumstances, the young physician would be much more likely to select

the type of practice for which he is actually best qualified.

If an adequate number of general practitioners existed, pseudoscientific healing cultists would be forced out of existence by the availability of superior medical care. True medical science would be benefited by the training of physicians in general practice as such training should provide the wide variety of information necessary for medical discoveries.

SUMMARY AND CONCLUSIONS

A shortage of general practitioners exists and present trends indicate it will become worse unless constructive measures are employed to halt overspecialization in the medical profession. This shortage of general practitioners is already being felt by the public and has a great deal to do with agitation for socialized medicine. If an economic depression or recession should develop, the need for general practitioners would be even more acute.

The Council on Medical Education and Hospitals of the American Medical Association should insist that specialty boards require three years of general practice in addition to a hospital internship as a prerequisite for entering specialty training. This requirement would accomplish the following:

1. Materially increase the supply of medical service of the general practice type through the contribution of three years of work by every medical graduate.
2. Retain many men permanently in the field of general practice who might otherwise become specialists.
3. Increase the medical graduate's utilization of a good history and a careful physical examination, as opposed to special diagnostic procedures.
4. Give proper emphasis to economic and social factors in disease and stress the common instead of the uncommon disease.
5. Aid the young physician in developing a good personality and a good bedside manner.
6. Help the prospective specialist in selecting the specialty for which he is best qualified.
7. Provide a decent income at a time in a

physician's career when it is often most needed.

8. Benefit the established practitioner through stimulating association with younger men and providing him with more time for study and participation in medical meetings.

9. Make training more accessible to those outside the normal chain of advancement from intern to resident physician and eliminate the fear of being unable to return to

specialty training after engaging in general practice.

10. Decrease the size of the outpatient departments of hospitals thereby checking the tendency of hospitals to enter the practice of medicine.

11. Force most practitioners of pseudo-scientific healing cults out of existence through increased competition.

12. Aid research by broadening the experience and knowledge of all physicians.

CLINICAL SYMPOSIUM ON PRESENT DAY USE OF ANTIBACTERIAL AND CHEMOTHERA- PEUTIC AGENTS

PART I—GENERAL INFORMATION

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INTRODUCTION

Living in an era in which new therapeutic agents for use in the war against infections have been introduced at a rapid rate, it is appropriate at certain intervals to pause and give a report of progress as to their varied clinical application. Progress in research is so rapidly progressive that, for the most part, clinicians are unable to assemble and evaluate this mass of material. Therefore, in this review, we have attempted to correlate this material and make it applicable for use by everyday clinicians.

In order to be brief, clear and practical, our statements may appear to be dogmatic, but this seemed necessary in order to concentrate to a usable medium the large mass of material that has accumulated on these subjects.

GENERAL PRINCIPLES

The following fundamental rules are recommended in the use of chemotherapeutic agents in the treatment of infections in man:

First: The etiologic agent should be identified by all available laboratory methods. Then, if no organisms are found and the pa-

tient's condition warrants antibiotics, they may be selected by clinical impression.

Second: There is a therapeutic overlap by many of these agents, but usually one (sometimes two) emerges as the drug of choice. The present trend of therapy is to combine two or three agents in order to increase the efficacy or broaden the therapeutic spectrum. Adequate dosages of the drugs should be used, but overtreatment should be avoided. The value of further therapy should be questioned if definite response is not evident within two to four days. It is important that antibiotics be used only when indicated in therapy or for prophylaxis. Indiscriminate administration prior to accurate diagnosis may lead to the development of resistant organisms, sensitization of the patient to the drug, or even a masking of the diagnosis.

PROPHYLACTIC USE OF ANTIBACTERIAL AGENTS

The use of antibiotics in the prevention of disease is an accepted procedure. Those diseases in which adequate clinical trial of antibiotics as a prophylactic measure have been carried out are listed below:

1. The prevention of gonorrhea.

2. The prevention of acquired and congenital syphilis.

3. The prevention of meningococcal infections.

4. The prevention of streptococcal infections in patients with rheumatic fever.

5. The prevention of bacteremia after trauma and surgery in patients with rheumatic or congenital heart disease. (To prevent subacute bacterial endocarditis.)

6. The protection of patients from infection after abdominal, thoracic, and plastic surgery.

7. The prevention of puerperal infection.

8. In an attempt to prevent rheumatic fever by treating every streptococcus sore throat and every scarlet fever with penicillin until cultures are negative.¹

Incompatible Antibiotics: Recently there have been several reports of the occurrence of synergism and antagonisms in antibiotic therapy. So far there has been advanced no explanation for this phenomenon.

It is now known that penicillin and streptomycin are synergistic in their effect on the enterococcus. It has also been shown that penicillin and bacitracin are more effective in combination for various types of infections.²

On the other hand, it is known that the administration of penicillin with chloromycetin in enterococcus infections will give an opposite effect. Apparently the penicillin is antagonistic to chloromycetin in this type of infection.

SULFONAMIDES

This is the oldest group of the chemotherapeutic agents. Their introduction a decade ago opened a new field in the treatment of infectious diseases. Sulfanilamide, sulfapyridine, and sulfathiazole all have been mostly discarded due to their toxicity. There are several newer drugs of this group now used. They are: sulfadiazine and sulfamerazine for oral and intravenous use, (sodium sulfadiazine); sulfasuxadine or sulfathali-

dine, for enteric infections; gantrisin, a new sulfonamide, and the sulfonamide mixtures.

The Dosage Schedule: This varies according to the severity of the infection and the causative organisms.

In severe or fulminating infections, 4 grams are administered orally as an initial dose, followed by 2 grams every 4 hours for 24 hours, later 1 gram every 4 hours. If intravenous administration is necessary, 5 grams are used as an initial dose, followed by 2 grams every 6-8 hours until oral administration can be instituted.

In moderately severe infections, 2 grams orally initially and 1 gram every 4 hours usually suffices. In mild infections (especially urinary infections) 1 gram every 6 hours is recommended. The length of administration of these drugs should possibly not be over 10 days if the above doses are used. The prolonged use of these drugs serves to promote sensitivity and toxicity. The dosage of gantrisin is mentioned in a special section on this drug.

There are several special precautions that are applicable to this type of therapy. The fluid intake should not fall below 3000 cc. per day. Indiscriminate "force fluid" is unnecessary and disadvantageous. One should be governed as to the amount of fluid needed by the urinary output, i. e., about 2000 cc. of urine per 24 hours.

The urine pH should be kept at 7.5 or higher (daily test with nitrazine paper is usually adequate) by giving 160 grains of sodium bicarbonate in 24 hours and adding fruits and fruit juices to the diet. If alkalization by mouth is impossible, 1000 cc. of 1/6 molar sodium lactate should be administered intravenously every 12 hours.

The urine should be checked for sulfa crystals every other day. This is performed simply by allowing urine to stand for 8-10 hours. Microscopic examination of the urine sediment will usually detect any crystallization products.

Toxicity: These reactions involve various organs. The following toxic reactions have been described: rash, fever, nausea and vomiting, renal damage (renal colic, hematuria, anuria from lower nephron nephrosis), blood dyscrasia (agranulocytosis, thrombocytopenia, hemolytic anemia), hepatitis with or without jaundice, nervous and mental symptoms, cyanosis caused by sulfa-

1. Denny, F. W.; Wanamaker, L. W.; Brink, W. R.; Rammelkamp, C. H., Jr., and E. A. Custer: Prevention of Rheumatic Fever. Treatment of the Preceding Streptococcal Infection, J. A. M. A. 143: 151, 1950.

2. Bachman, M. C.: In Vitro Studies on Possible Synergistic Action between Penicillin and Bacitracin, J. Clin. Invest. 28: 864, 1949.

hemoglobinemia (mostly with sulfanilamide, negligible with sulfadiazine), and acidosis (with sulfanilamide only). There is clinical and experimental evidence that sulfonamides can produce hypersensitive reactions manifest by a vascular necrosis resembling periarteritis nodosa.³

GANTRISIN

This recently introduced sulfonamide has been described as having the following characteristics:^{4, 5, 6}

a. A good solubility in the range of pH 6.0-8.0, therefore, no alkalization of urine is necessary.

b. A very low toxicity has been observed.

c. A good therapeutic range: This drug has the usual systemic indication of the other sulfa drugs and is thought to be more effective against renal infections due to *B. proteus* and *B. coli* infections.

d. The drug can be administered orally, intramuscularly and intravenously.

e. The dosage: An initial dose of 4-6 grams, followed by 1-2 grams every 4 hours given orally is recommended. For parenteral administration, 4 grams in a 10 cc. ampule is available and may be given intramuscularly, according to the oral schedule. In intravenous therapy, 4 grams should be given initially, then, 2 grams every 8 hours.

SULFONAMIDE MIXTURES

In 1947, Frisk and his associates introduced a combination of three sulfonamides—sulfathiazole, sulfadiazine, and sulfamerazine (37 per cent, 37 per cent, 26 per cent, respectively) as a new chemotherapeutic principle.⁷ In this combination it

was shown that the incidence of toxicity and crystallization in the urinary tract after administration of the sulfa mixture was not higher than it would have been had the proportionate amounts of each member of the mixture been given separately. At the same time the therapeutic effect was that of the total amount of the sulfa drugs in the mixture. The causes of reduced crystallization in a sulfa mixture are due to the decreased acetylation and higher solubility of acetylated compounds in the mixtures. These characteristics reduce the need for alkalization.

It now appears, though, that the use of mixtures offers greater chance for sensitization to each of the composite drugs. Therefore, a mixture of two, such as sulfamerazine and sulfadiazine, might be the best combination. In using these two drugs, the incidence of sensitization would not be materially increased inasmuch as sensitivity to one is almost invariably accompanied by sensitivity to the other.

The present accepted attitude toward the use of sulfa mixtures is that their application is advantageous in cases where large doses or prolonged administration is necessary.

PENICILLIN

There are numerous preparations of penicillin on the market. They are all modifications of the water soluble product. In general, these modifications are made for the purpose of decreasing the absorption of the drug from the site of injection. The preparations used are: crystalline penicillin G, procaine penicillin in water, or the oil, with 2 per cent monostearate, and the oral penicillin preparations.

The Dosage Schedules: There is no known upper limit as far as the dosage is concerned. There has been no penicillin toxic dose determined inasmuch as the toxicity to the sodium or potassium ion to which the penicillin molecule is combined appears earlier than the toxicity to penicillin.

In moderately severe infections, 300,000 to 600,000 units of procaine penicillin should be given, supplemented with regular penicillin, 100,000 to 200,000 units every 8 to 12 hours.

In severe infections, 600,000 units of procaine penicillin should be given once daily,

3. Gelfand, M. L., and S. Aronoff: Periarteritis Nodosa. Possible Relation to the Increased Usage of Sulfonamides, *Ann. Int. Med.* 30: 919, 1949.

4. Svec, F. A.; Rhoads, P. S.; Rohr, J. H., and Kraus, I.: A New Sulfonamide (Gantrisine [R]): Studies on Solubility, Absorption and Excretion, *Arch. Int. Med.* 85: 83, 1950.

5. Rhoads, P. S.; Svec, F. A., and Rohr, J. H.: Bacterial Meningitis: Results of Treatment in Seventeen Cases With a New Sulfonamide (Gantrisin [R]), *Arch. Int. Med.* 85: 259, 1950.

6. Carroll, G.; Allen, H. N., and Flynn, H.: Gantrisin in the Treatment of Urinary Infections, *J. A. M. A.* 142: 85, 1950.

7. Frisk, A. R.; Hagerman, G.; Helander, S., and Sjogren, B.: "Sulfa Combination," A New Chemotherapeutic Principle, *Brit. M. J.* 1: 7, 1947.

with 2-3 hourly crystalline penicillin injections in dosage anywhere from 1,000,000 to 20,000,000 units or more per 24 hours. A continuous intravenous drip therapy may be indicated if the condition warrants it.

In mild infections, 300,000 to 600,000 units of procaine penicillin should be given once daily.

The special dosages for syphilis will be treated in a special section (Part II, to appear in the January number).

In oral administration of the drug, 3 to 5 times as much should be given as in the parenteral dose. The use of buffer solutions with oral preparations has been shown to be unnecessary.

For topical application an oil base is more effective than an aqueous solution. Most ointments contain 1,000-2,000 units per gram. The ointment containing calcium penicillin, 500 units per gram, shows no loss of potency for 12 months when kept at refrigerator temperature, in contradistinction to all the sodium penicillin preparations which show some decrease in potency after one month. Therefore, the calcium preparation is the drug of choice in an ointment. In the preparation of penicillin ointment and solutions, it is helpful to know that 1 milligram of penicillin equals 1,666.6 units.

In aerosol administration, 50,000-100,000 units should be given 3-6 times daily of powdered crystallized penicillin as a dust or preferably in solution. (See Aerosol Mixtures, Part II.)

For injection in the pleural cavity or joint spaces, 100,000 to 300,000 units should be used in dilution of 1,000-20,000 units per cc., administered daily or every other day.

In intrathecal administration, it is well to remember that this route of administration of penicillin is generally contraindicated. It may be used only in desperate cases, giving 10,000 to 30,000 units in 10 cc. saline once or twice daily after removal of same or somewhat larger amounts of spinal fluid.

DISCONTINUOUS PENICILLIN THERAPY

The interval of injection is a matter of importance to both the patient and his physician. The practice of 3-4 hourly injections of crystalline penicillin has been discarded for injections at 8, 12, or 24 hour intervals.

It has been shown that the maintenance of constant effective blood levels is not necessary for therapeutic effect, inasmuch as the tissue storage of penicillin remains effective much longer than the blood level. In addition, most pathogenic organisms usually require several hours to recover from the effect of penicillin after the drug has disappeared from its environment (bacterial recovery period).⁸

A recent report states that excellent therapeutic results have been obtained in treatment of pneumococcal pneumonias with one daily injection of 300,000 units of crystallized penicillin.⁹ Another author reports various infections treated with single injection of 300,000 units of procaine penicillin in oil with aluminum monostearate in which the results were comparable to those seen with other penicillin regimens.¹⁰ Surgical infections treated by 200,000 units of crystalline penicillin every 12 hours gave as good results as with administration every 3 hours.¹¹

PENICILLIN BLOOD LEVELS

Determination of the individual sensitivity of an organism to the suppressing antibiotic is an extremely useful adjunct in therapy. These sensitivity tests are indicated in the treatment of staphylococcus infection, bacterial endocarditis, and in cases under treatment in which little or no therapeutic result has been obtained within a proper time.

The average infection is well controlled by a penicillin blood level of 0.05 units per cc. Three hundred thousand units of pro-

8. Eagle, H.: The Recovery of Bacteria from the Toxic Effects of Penicillin, *J. Clin. Invest.* 28: 832, 1949.

9. Blankenhorn, M. A.; Thompson, R. T.; Hamburger, M., and Berman, J. R.: The Treatment of Pneumococcal Pneumonia by a Single Daily Injection of Aqueous Penicillin with One Supplementary Injection on the First Day, *Chicago M. Soc. Bull.* 52: 121, 1949.

10. Hirsh, H. L., and Kurland, W.: Treatment of Various Infections with Procaine Penicillin in Oil with 2 Per Cent Aluminum Monostearate, *Abstr. South. Soc. Clin. Res., Am. J. Med.* 7: 243, 1949.

11. Southworth, J. L., and Dobbs, C. H.: Prolonged Interval Dosage of Aqueous Penicillin in Surgical Infections, *South. M. J.* 42: 981, 1949.

caine penicillin in water or in oil gives an 0.05 unit per cc. level for 24 hours; 600,000 units of procaine penicillin in water or oil gives the same level for a period of 48 hours; 300,000 units of procaine penicillin in oil with 2 per cent aluminum monostearate gives 0.05 units per cc. level for a period of 120 hours.¹²

Increasing the dosage of the so-called depot penicillin prolongs only the duration of the predetermined blood level. The height of the blood level is rarely, if ever, changed by increasing the individual dose. Penicillin levels obtained with various dosages of crystalline penicillin in divided injections have been reported as follows: Two hundred thousand units per day gave a level of 0.05 units per cc.; 300,000 units per day gave a level of 0.1 unit per cc.; 500,000 units per day gave a level of 0.2 units per cc.; 1,000,000 gave 0.5 units per cc.; 2,000,000 units gave 1.2 units per cc. level.^{13, 14, 15}

In cases when very high blood levels are necessary and, therefore, very large doses have to be given, the continuous intravenous or intramuscular infusion gives higher and more constant blood levels than any other methods. If this continuous method cannot be carried out, 2-3 hourly injections are necessary.

The combination of procaine and crystalline penicillin in moderately severe or mild infections assures a good therapeutic level with relatively few injections.

PENICILLIN EXCRETION BLOCKING AGENTS

These drugs are to be used when high penicillin levels are required in severe infections or in infections due to relatively resistant organisms.

Caronamide is the most widely used of

these drugs. It is given orally in the amount of 3 grams every 6 hours.

Recently a new benzoic acid derivative, Benemid, was investigated and found effective orally in 0.5 gram doses every 6 hours, raising the penicillin level 100 to 200 per cent.¹⁶

Toxicity: Allergic reactions may occur, especially if the patient has been sensitized to penicillin by previous treatment. This occurs more often if the drug is applied locally to skin or by troches to mucous membranes. The types of reactions most commonly seen are the Arthus' phenomenon, contact dermatitis, serum reaction and anaphylactic shock. Reaction of the skin at the site of previous trichophylin infections is common. Oral reactions after troches or aerosol therapy usually consist of discoloration of tongue, but stomatitis may be present. Once a patient has been sensitized, he will react to a second injection of penicillin for a long period of time, sometimes as much as a year or longer.

Penicillin reaction may be avoided by the following suggestions: First, indiscriminate use of penicillin, especially for minor infections, should be avoided, and before administration the patient should be asked if penicillin has previously been given and whether or not a reaction occurred. Second, great care should be taken if hypersensitivity is suspected. Skin testing is not reliable. Simultaneous administration of antihistaminic drugs may or may not help.

In the treatment of toxic reactions, antihistaminics are very disappointing. They may control the itching of skin eruption. Better results have been obtained with intravenous calcium gluconate, 10 cc. 2-3 times a day. Intravenous procaine penicillin has afforded good relief from the pruritis.

An increased tolerance to penicillin can be obtained in patients who show evidences of sensitivity. Small doses should be given, such as 1,000 units at intervals of a day or more. This desensitization procedure may be used in cases in which antihistaminic drugs are of no avail.

12. Keefer, C. S.: Dosage Forms of Penicillin for Systemic Infections, *Am. J. Med.* 7: 216, 1949.

13. Griffith, G. C., and Levinson, D. C.: Subacute Bacterial Endocarditis; a Report on 57 Patients Treated with Massive Doses of Penicillin, *California Med.* 71: 403, 1949.

14. Beakay, J. F.; Gaensler, E. A., and Segal, M.: A Comparative Study of Various Apparatus and Techniques for Aerosol Administration, *Connecticut M. J.* 13: 855, 1949.

15. Davis, D.: Inhalation of Penicillin and Streptomycin in Office Practice, *Arch. Otolaryng.* 50: 156, 1949.

16. Boger, W. P.; Pitts, F. W., and Flippin, H. F.: The Influence of a New Benzoic Acid Derivative on the Metabolism of Para-aminosalicylic Acid (PAS) and Penicillin, *Ann. Int. Med.* 33: 18, 1950.

In a more recent report there has been described a so-called "biologic complication" of penicillin therapy.¹⁷ In these cases either an intercurrent infection ensued caused by a similar organism resistant to penicillin, or to an entirely different type of organism, likewise resistant to penicillin. The inflamed tissue makes an easy growing site for other pathogens. In this report 15 cases were presented to illustrate the importance of shifts in the bacterial flora during penicillin therapy. Two of the 4 patients died of this complication and 2 recovered after streptomycin was added to the therapy.

Other recent reports have shown that penicillin in the usual therapeutic dosages has no effect on the clotting activity of blood in normal human subjects.¹⁸ This is of interest to patients who have a thromboembolic phenomenon and develop conditions in which penicillin therapy is indicated. Heretofore, there has been some question as to whether penicillin enhanced the clotting ability of the blood, hence, predisposing to phlebothrombosis.

Apparently antagonism between the procaine content in procaine penicillin and the simultaneous administration of sulfonamides is negligible.¹⁹ The possibility of such an antagonism has been postulated.

PENICILLIN O

In face of increasing frequency of reactions to benzylpenicillin (penicillin G), investigators have prepared, by biosynthesis, new crystalline penicillin compounds. One of these compounds, allylmercaptoneethylpenicillin, has been studied extensively.²⁰ This compound has been given the name penicillin O. These investigators used the antibiotic in inhalation therapy, orally troches, and in parenteral therapy. All the

patients treated were known to be sensitive to penicillin G. Of the 57 patients treated, none showed any untoward reactions to the drug. In addition, penicillin O proved therapeutically as effective as penicillin G. Apparently this new penicillin may find its best use in patients who are known to be hypersensitive to penicillin G.

STREPTOMYCIN AND DIHYDROSTREPTOMYCIN

There are two important members of this group. Streptomycin was first introduced, to be followed a short time later by dihydrostreptomycin. At the time of the introduction of the latter drug it was felt that the modification of the drug molecule would render it less toxic, especially in its effect on the vestibular apparatus. This has proven true, but in the alteration of the toxicity, the efficacy of the drug was impaired.

There are several general comments concerning therapy with this antibiotic that should be of interest to the therapist. Dihydrostreptomycin in equivalent doses is somewhat inferior to streptomycin. Though the toxicity is reduced as far as the vestibular nerve is concerned, the dihydrostreptomycin has a neurotoxic affinity for the acoustic nerve, making deafness a possibility.

It has been shown also that resistance of the tuberculosis mycobacteria to the streptomycin renders it also resistant to dihydrostreptomycin. On the other hand, dihydrostreptomycin may be given in larger doses without markedly increasing the incidence of toxic reactions. Allergic manifestations may be present after administration of streptomycin, but these usually disappear after changing to dihydrostreptomycin. Both drugs have about the same spectrum of efficacy.

Dosage: In infections other than tuberculosis, which will be treated in a special section, 2 grams of these drugs are given daily in two equally divided doses. This method of administration has been found to be just as efficacious as the more frequent administration and toxic reactions are less frequent.

For infections of the urinary tract, the usual recommended doses are 2 grams daily for 8 days, or if a more intensive regimen is indicated, 4 grams daily for 4 days may be given. It is also advantageous to alkalinize

17. Sommer, L. S., and Favour, C. B.: Biologic Complications of Penicillin Therapy, *Am. J. Med.* 7: 511, 1949.

18. Dolkart, R. E.; Halpern, B.; Larkin, M.; Dey, F. L., and DeTakats, G.: The Effect of Penicillin upon the Clotting Activity of Blood in Normal Human Subjects, *J. Pharm. & Exper. Therap.* 96: 291, 1949.

19. Fischbach, H.; Welch, H.; King, E. Q.; Levine, J.; Price, C. W., and Randall, W. A.: Procaine Penicillin and Sulfonamide Antagonism, *J. Am. Phar. (Scient. Ed.)* 38: 544, 1949.

20. Volini, I. F.; Shlaes, W. H., and Felsenfeld, O.: Use of Penicillin O in Patients Hypersensitive to Penicillin G, *J. A. M. A.* 143: 794, 1950.

the urine in cases with urinary tract infection, as the efficacy of the drug is increased in an alkaline medium. The urine may be alkalized by administration of 160 grams of sodium bicarbonate in 4 divided doses for 24 hours, given orally. Fresh fruits and fruit juices, especially of the citrous variety, should be added to the diet.

In aerosol therapy, 100 to 200 milligrams three to six times daily is the recommended dosage. Under the section dealing with treatment of chronic pulmonary infections, a more detailed outline of this method of treatment is given. (See Part II, January 1951 issue.)

Toxicity: In these two antibiotics the toxicity is proportionate to the dosage and to the length of administration. The following reactions have been observed: a local reaction occurring at the site of injection, a contact dermatitis; and histamine-like effect, such as headache, flushing of the skin, nausea and vomiting, and falling blood pressure. This reaction has practically been eliminated after further purification of the drug was perfected, but a sensitization reaction, such as skin eruptions, fever and eosinophilia, may still occur.

The following skin lesions have been reported: dermatitis, erythematous, urticarial, maculopapular, hemorrhagic; dermatitis venenata, exfoliative dermatitis, edema of the eyelids with pruritis and photophobia, dry and chapped lips, swollen, red and painful tongue and stomatitis. The most common skin reaction seen is a generalized maculopapular erythematous rash. Pruritis is usually mild, but it may be extreme. These skin lesions, except for the exfoliative dermatitis, are usually self limited and there is no reason to discontinue treatment. They usually appear from the 3rd to the 10th day after treatment has been started, but may be observed as early as the 2nd day and even appear after treatment has been stopped. The reaction may last from 5 to 10 days after which they may spontaneously disappear. Exfoliative dermatitis is a rare complication, but when it occurs it warrants immediate cessation of therapy.

Blood dyscrasias, such as neutropenia, agranulocytosis and aplastic anemia, have been reported. The occurrence of jaundice has been noted only rarely. This reaction

causes speculation as to whether transmission of the hepatitis causative viruses by contaminated syringes may account for most of these reactions.

Renal damage has been reported only rarely. With more refined preparations, this toxicity has all but disappeared.

Apparently these drugs have a specific neurotoxic affinity. Long term therapy quite often brings symptoms of either vestibular or acoustic nerve involvement. A low pitched, continuous tinnitus marks the onset of nerve deafness. If the drug is withdrawn at this time the damage is reversible. Vestibular function when it occurs is more likely to be permanent.

The administration of dihydrostreptomycin intrathecally has brought about definite extensive spinal cord damage so that, when these drugs are indicated for this route of administration, streptomycin is the drug of choice.

Miscellaneous toxic reactions recorded have been diarrhea, arthralgias, purpura hemorrhagica, circumoral paresthesia and toxic psychosis.^{21, 22, 23, 24, 25}

Bacterial Resistance: Bacterial resistance usually develops early and rapidly, therefore, in non-tuberculous cases, short and intensive courses are indicated. Two kinds of variants of the causative bacteria may emerge during therapy with these antibiotics; strains which can grow in the presence of streptomycin and strains which grow only when streptomycin is present (drug dependent strains). The therapeutic import of these bacterial variants should always be kept in mind so it may be recognized early and coped with adequately.

21. Streptomycin in the Treatment of Infections. A Report of One Thousand Cases, The Committee on Chemotherapeutics and Other Agents, National Research Council, J. A. M. A. 132: 70, 1946.

22. Report of the Council on Pharmacy and Chemistry. The Effect of Streptomycin in Tuberculosis in Man, Preliminary Statement, J. A. M. A. 135: 634, 1947.

23. Cohen, A. C., and Glinsky, G. C.: Cutaneous Lesions Occurring in the Course of Streptomycin Therapy, Arch. Dermat. & Syph. 60: 373, 1949.

24. Behan, H., and Perr, H.: Stomatitis Due to Streptomycin, J. A. M. A. 138: 495, 1948.

25. Moyer, J. H., and Womack, C. R.: Aplastic Anemia as a Complication of Streptomycin Therapy, Bull. U. S. Army Med. Dept., Sept. 1949, p. 793.

AUREOMYCIN

This drug, recently introduced, has been enjoying increasing popularity. Its wider spectrum of action, including some of the viruses and rickettsia, has made the drug a valuable addition to our armamentarium.

Dosage: The recommended dosage varies with the route of administration. The oral route of administration is used most frequently. For the average adult, approximately 500 milligrams given at 6 hour intervals will suffice. Some clinicians prefer giving the drug at 3 hour intervals, using only 250 milligrams or more every 3 hours.

Early after administration of the drug it diffuses into the body cavities. It can be detected very early in the cerebrospinal fluid.

Aureomycin has been used effectively against urinary infection. In this type of therapy it is best to acidify the urine by use of ammonium chloride given orally. The dose of this acidifying drug should be 1.5 grams given 4 times daily. Fresh fruits and juices should be omitted from the diet because of their alkalizing effect. For the best therapeutic effect in these infections, the pH of the urine should be kept at 5.0 or below. This can be adequately checked by using nitrazine paper.

The parenteral route of administration may be used in patients in whom oral therapy is not feasible. Intravenous administration of 500 milligrams in 500-1000 cc. of a 5 per cent glucose solution administered over a period of 1 hour, given at 12 hour intervals, is usually recommended. The intramuscular route of administration is to be avoided because of the local irritating effect of the drug.

There has been an ophthalmic solution introduced. This consists of 0.5 per cent solution of aureomycin borate. Its use in eye infections has been highly satisfactory.

Toxicity: The toxicity is very low in comparison with the formerly known antibiotics. Nausea, vomiting and diarrhea are the most common symptoms. These disappear when therapy is discontinued or when the drug is given after meals, or is given with bicarbonate of soda, or is preceded by Amphojel, or the daily dose is divided into more frequent, smaller doses. A few instances of

skin eruptions have been seen. Angioneurotic edema has been reported following administration of this drug.²⁶ A Herxheimer-like reaction was noted during the treatment of a case of brucellosis characterized by a sudden rise and fall in temperature.²⁷ A shock-like picture was noted, which was manifested by a fall in blood pressure accompanied by a tachycardia. Acid reaction caused by the drug may cause vaginitis and anal pruritis. These are not uncommon side effects.

Development of Bacterial Resistance: Development of bacterial resistance has not been observed, nor has an aureomycin inactivator, similar to penicillinase, been detected.

Production of Vitamin Deficiency: As in other orally administered antibiotics, aureomycin affects the normal bacterial flora in the intestines. This flora is necessary in the synthesis and assimilation of several members of the B complex group. Sore tongue, paresthesias and cheilosis are commonly seen after prolonged oral administration of aureomycin. It is, therefore, necessary to give supplementary vitamins, especially of the B complex, to patients receiving oral aureomycin for 7 days or longer. Its effect on the intestinal flora may cause the stools to be soft and almost odorless.

Likewise, a vitamin K deficiency has been observed. Here, again, the changes in the intestinal flora have altered the normal dynamics of the synthesis and absorption of this antihemorrhagic vitamin. The parenteral administration of vitamin K rapidly relieves this deficiency.

CHLORAMPHENICOL (CHLOROMYCETIN)

This antibiotic was introduced at about the same time as aureomycin. Its scope of efficacy does not have as wide a spectrum as that of aureomycin, but it has been proved the treatment of choice in some of the bacterial infections, specifically those due to *Bacillus typhosus*.

This drug has the advantage in that it is the first antibiotic that has been synthe-

26. Parets, A. D.: Angioneurotic Edema and Rash Due to Aureomycin. Reaction in a Patient with Multiple Sensitivities, J. A. M. A. 143: 653, 1950.

27. Quoted by above.

sized. Thus, the research possibilities through this synthesis may offer new and better possibilities in the field of antibiotic therapy. This will also serve to lower the price, making it more widely available.

Like aureomycin, soon after administration of this drug, it diffuses into pleural cavity, bile and cerebrospinal fluid. It also has been shown to pass through the placenta into the fetal circulation.

Dosage: In severe infections, an initial dose of 50-100 milligrams per kilogram body weight is given, after which the same amount is continued for 24 hours in 6 divided doses, given orally. For moderate and mild infections (urinary infections, atypical pneumonia and to inhibit intestinal flora) 0.5 gram every 4 to 6 hours is usually sufficient.

Toxicity: The toxicity is very low in comparison with other antibiotics. Gastro-intestinal symptoms (nausea, vomiting, diarrhea) have been occasionally encountered. A sporadic case of skin eruption has also been described. Moniliasis of the oral cavity, neutropenia, and anemia have been seen in isolated cases.²⁸

The development of bacterial resistance has not been observed. However, in active growing broth cultures of certain organisms an enzyme has been found that destroys chloromycetin, so-called "Enzyme A." The clinical importance of this observation has not been determined.

Since oral chloromycetin also affects the normal bacterial flora in the intestines, the vitamin B complex should be given to patients receiving chloromycetin by mouth for periods longer than 7 days. Hemorrhagic disorders may occur due to a disturbance of the metabolism and absorption of vitamin K.

TERRAMYCIN

This is a new antibiotic available only

28. Volini, I. F.; Greenspan, I.; Ehrlich, L.; Gouner, J. A.; Felsenfeld, O., and Schwartz, S. O.: Hematopoietic Changes during Administration of Chloramphenicol (Chloromycetin), J. A. M. A. 142: 1333, 1950.

since March 1950.^{29, 30} It diffuses readily into the pleural fluid, bile, and into the fetal circulation. It does not appear to diffuse well into the cerebrospinal fluid.

The clinical effectiveness of this drug has been under investigation for only a short time and, as yet, only a few reports have appeared in the literature. However, it appears that its spectrum of antibiotic activity is similar to that of aureomycin or chloromycetin. There is one notable exception in that it lacks effectiveness against the typhoid group of organisms.

Toxicity: In a small percentage of patients, mild gastro-intestinal disturbances (diarrhea, vomiting, nausea) have been noted. It also alters the intestinal flora similar to that seen after administration of other oral antibiotics, making vitamin B and, to a lesser extent, vitamin K deficiencies a possibility. Glossitis has been seen in a few instances.

Dosage: A total daily dose of 2-3 grams in 4 divided doses, given orally, is the recommended dosage. In severe infections, this dose may be increased to 4-6 grams.

In treatment of urinary tract infections the urinary pH does not appear to alter the effectiveness of the drug.

BACITRACIN

This drug has its main application in topical administration. There is little or no toxicity when it is used locally. This is most likely due to the fact that the drug is not absorbed from local sites. Probably this also explains the very low incidence of allergic reactions after this type of application. Its marked effectiveness against both gram-positive and gram-negative organisms (more against gram-positive) makes it of greatest usefulness in mixed infections. The value of bacitracin is in its wide antibacterial spectrum of efficacy.

There is a synergistic effect between peni-

29. Finlay, A. C.; Hobby, G. L.; Plan, S. Y.; Regna, P. P.; Routien, J. B.; Seeley, G. M.; Shull, G. M.; Sobin, B. A.; Solomons, I. A.; Vinson, J. W., and Kane, J. H.: Terramycin, a New Antibiotic, Science 111: 85, 1950.

30. King, E. Q.; Lewis, C. N.; Welch, H.; Clark, E. A.; Johnson, J. B.; Lyons, J. B.; Scott, R. B., and Cornely, P. B.: Clinical Observations on the Use of Terramycin Hydrochloride, J. A. M. A. 143: 1, 1950.

cillin and bacitracin.² Bacitracin is not inhibited by penicillinase-producing organisms. Meleney and his group found that of the organisms isolated from various infections, 122 species were susceptible to bacitracin and penicillin, 104 were susceptible to bacitracin and resistant to penicillin, and only 11 were resistant to bacitracin and susceptible to penicillin.³¹

Meleney and Johnson reported the first 100 cases of surgical infections treated locally with this antibiotic.³² They obtained excellent or good results in 88 per cent of the cases. Miller and his associates reported good results from the local use of bacitracin in primary superficial infections of the skin.³³ Bellows and Farmer were able to show good results after using bacitracin in ocular infections.³⁴

Prigal and Furman investigated the use of bacitracin in aerosol form and concluded that the use of penicillin with bacitracin gave a higher incidence of good results (85.6 per cent) than with either one used alone.³⁵ The use of bacitracin in aerosol form is advocated because bacitracin is poorly absorbed from topical applications in the respiratory system. In addition, it is relatively non-sensitizing. It is uninhibited by tissues, secretions, or organisms which produce penicillinase. The drug can be used where penicillin hypersensitivity exists. It does not cause production of an inhibitory enzyme.

Topical application is the most widely

used method of administration. There are several preparations available: an ointment form which contains about 500 units per gram; an aqueous solution containing 500 units per cubic centimeter for dressings and direct instillations; and it may be used for local infiltrations. One to 5 cubic centimeters of solution containing 400 units per cubic centimeter, with 1 to 2 per cent procaine added, is used in this procedure. In aerosol therapy a solution of 2000 units per cubic centimeter in propylene glycol is recommended.

Systemic Application: Unfortunately, systemic administration produces toxic symptoms. Nephrotoxic manifestations may be produced after parenteral administration. Meleney and his associates analyzed the results in the treatment of 270 cases of surgical and medical infections treated by intramuscular bacitracin.³¹ The authors point out that the toxic factor of bacitracin is far outweighed by its therapeutic value. Patients should be watched carefully with daily urinalysis and blood urea nitrogen, once or twice weekly. Albuminuria of 1 plus to 3 plus or an increase of 50 to 100 per cent in the blood urea nitrogen was not considered a reason to discontinue treatment, inasmuch as these changes are readily reversible. The 270 reported cases included cases of pneumococcal pneumonia, cellulitis, infected wounds, deep abscesses, chronic osteomyelitis, carbuncles, endocarditis, leg ulcers, gangrene, and staphylococcus meningitis. The overall good results were obtained in 65.6 per cent of cases. About three fifths of all patients had failed to respond to previous antibacterial therapy. In this group of patients, 55.6 per cent responded satisfactorily to subsequent bacitracin therapy. Two-fifths of the cases which had no previous systemic treatment showed favorable results in 78.1 per cent.

At the present time the indication for systemic bacitracin therapy is in those cases in which the infective organism is susceptible to bacitracin and resistant to other antibiotics or in those infections which have failed to respond to other methods of treatment.³⁶ There is one report in which systemic bacitracin was used for the treatment

31. Meleney, F. L.; Longacre, A. B.; Altemeier, W. A.; Reisner, E. H., Jr.; Pulaski, E. J., and Zintel, H. A.: The Efficacy and the Safety of the Intramuscular Administration of Bacitracin in Various Types of Surgical and Certain Medical Infections; With an Analysis of 270 Cases, Surg., Gynec. & Obst. 89: 657, 1949.

32. Meleney, F. L., and Johnson, B. A.: Bacitracin Therapy. The First Hundred Cases of Surgical Infections Treated Locally with the Antibiotic, J. A. M. A. 133: 675, 1947.

33. Miller, J. L.; Slatkin, M. H., and Johnson, B. A.: Local Use of Bacitracin, J. Invest. Dermat. 10: 179, 1948.

34. Bellows, J. G., and Farmer, C. J.: The Use of Bacitracin in Ocular Infection. Part II. Bacitracin Therapy of Experimental and Clinical Ocular Infection, Am. J. Ophth. 31: 1211, 1948.

35. Prigal, S. J., and Furman, M. L.: The Use of Bacitracin, a New Antibiotic in Aerosol Form. Preliminary Observations, Ann. Allergy 7: 662, 1949.

36. Meleney, F. L., and Johnson, B. A.: Bacitracin, Am. J. Med. 7: 794, 1949.

of progressive bacterial synergistic gangrene.³⁷ This resulted in the cure of the 5 cases reported, 4 of which had failed to respond to prior penicillin therapy.

Bacitracin for systemic use is not commercially available. It may be purchased by physicians for patients afflicted with life threatening infections, such as subacute bacterial endocarditis caused by bacitracin sensitive, penicillin resistant organisms. To obtain bacitracin for this use, a special form certifying its administration for experimental purposes must accompany the order.

Recommended Dosage: When parenteral therapy is decided upon, a dose of 200 units per kilogram of body weight every 6-8 hours is usually sufficient. The dose may be doubled or trebled if necessary. The drug is administered intramuscularly. A preparation to be used should meet a specification of a minimal lethal dose of 50 to 500 units for a 20 gram mouse.³¹

POLYMYXIN

There are five polymyxin polypeptides which have been isolated, namely, A, B, C, D, E. These drugs have been shown to be effective against common gram-negative pathogens, with exceptional value in its effectiveness against *Pseudomonas aerogenes*, *E. coli*, *K. pneumonia*, *H. pertussis*, and *H. influenza*. It is more effective against gram-negative organisms than aureomycin, chloromycetin, or streptomycin. The drug also appears to be effective against the *Shigella* organisms.

Unfortunately, it is too toxic for routine clinical use, inasmuch as it produces severe renal damage and neurologic disturbances. No bacterial resistance has been found to develop after administration of this antibiotic.

AEROSPORIN (POLYMYXIN B):

This variant of polymyxin resembles the parent antibiotic in its range and toxicity.

NEOMYCIN

Isolation of a new antibiotic from the culture filtrate of *Streptomyces fradiae* was reported by Waksman and Lechevalier early

in 1949.³⁸ Neomycin is active against various gram-positive and gram-negative organisms, especially tuberculosis. Its action is both bacteriostatic and bactericidal. Apparently it has limited toxicity. The drug has only one-tenth the toxicity of streptomycin, but is about five times more active. This antibiotic is active against streptomycin sensitive and resistant organisms. Resistance to neomycin has not been observed. Its clinical application is still under investigation. In experimental work, this drug has proven far superior to the streptomycin in the treatment of tubercular infections. It is also apparently active against *Salmonella*, *Brucella*, cholera vibrio, and *Endameba histolytica*.³⁹

TYROTHRICIN

This antibiotic is effective against many species of gram-positive bacteria, such as the pneumococcus, streptococcus, diphtheria bacillus, and staphylococcus.

Because of its toxicity when used systemically, its use is limited to topical application, and, then, only to areas which are not in direct contact with the blood stream. Reports indicate that it is most efficacious in infected ulcers, abscesses of the skin, infection of postoperative wounds, infections of the sinuses, bones, bladder and pleura, otitis media, infections of the eye, and various dermatologic conditions.

A solution containing 0.5 milligram per cubic centimeter may be used for wet dressings, drops, spray, irrigation and instillation into cavities. Anosmia has been reported from intranasal use.⁴⁰

(To be concluded in the January number)

38. Waksman, S. A., and Lechevalier, H. A.: Neomycin, a New Antibiotic Active against Streptomycin-Resistant Bacteria, Including Tuberculosis Organisms, *Science* 109: 305, 1949.

39. New Antibiotics. Editorial, *J. A. M. A.* 142: 260, 1950.

40. Tyrothricin and Anosmia, Editorial, *J. A. M. A.* 141: 782, 1949.

37. Meleney, F. L.; Shambaugh, P., and Mil-lan, R. S.: Systemic Bacitracin in the Treatment of Progressive Bacterial Synergistic Gangrene, *Am. Surg.* 131: 129, 1950.

We may yet, through the wonderful persistence of . . . research workers, reach the situation described in Samuel Butler's *Erewhen*, a community in which ill health was regarded as a crime and a man accused of "pulmonary consumption" was convicted and sentenced to imprisonment, at hard labor, for the rest of his miserable existence.—*Claude M. Fuess, Ph. D., New England J. Med., September 21, 1950.*

DIVERTICULUM OF THE FEMALE URETHRA

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Diverticulum of the female urethra has been defined as a dilatation of a circumscribed portion of the inferior wall of the urethra which produces a pouch or sacculatation that communicates with the urethral canal. This opening may be wide, pin point or tubular. At times there may be multiple openings from the sac into the urethral floor. In size, the width of the sac may vary from a few millimeters to several centimeters. One has been described as large as a lemon and extended between the urethra and anterior vaginal wall to a point beneath the bladder base. It is not a very rare clinical entity, nor is there anything particularly new in its diagnosis or treatment; but this condition is misdiagnosed more frequently than is warranted, as evidenced by the long duration of symptoms in the majority of reported cases before definite treatment was instituted.

As long ago as 1814, Sir Charles Mansfield Clarke published in England an account of diverticulum of the female urethra; and in 1871, Bozeman, and, in 1895, Bagot published accounts of such cases in this country. But as recently as 1944 a review of the literature revealed only a total of sixty-three such cases reported. No doubt there were many others which were correctly diagnosed and properly treated but were not recorded in print. However, since this time a rather voluminous literature has accumulated. This is probably due to greater alertness on the part of the examining physician in suspecting its existence when presented with the usual symptoms caused by its presence and in recognizing the physical characteristics of the lesion.

Diverticula of the female urethra have been referred to under various names, as cysts, periurethral abscesses, urinary pockets, and urethroceles, and various theories as to etiology have been suggested. Counsellar, in his review of seventy-one cases

from the Mayo Clinic, is of the opinion that they originate as congenital defects of the urethra and are subsequently influenced by trauma and non-specific infections and are not due, as most authors have concluded, from repeated infections in a urethral gland, most likely of Neisserian origin. Engel concludes that clinical evidence in these cases argues strongly that these lesions are acquired, and that a periurethral cyst is an intermediate stage in their development. Rupture into the urethra establishes the communication and transforms them into diverticula. Johnson, in his excellent article, lists the assumed causes under two headings: one acquired, the other congenital. Under the first he lists: 1. trauma of childbirth; 2. infection of the urethral glands, with sealing off of the opening to the urethra, formation of abscess and reestablishment of communication; 3. instrumentation of the urethra, especially deep fulguration of urethral lesions; 4. secondary to urethral stricture, and 5. secondary to urethral stone. Under the latter, or congenital causes, he names: 1. Gartner's duct, 2. cysts formed from faulty union of primal folds, 3. cell rests, 4. Wolffian duct, and 5. vaginal cysts.

It is quite difficult for us to understand just what is meant by faulty union of primal folds, or how simple vaginal cysts, which are quite common, can be blamed for this condition. It is also not clear why so many of the essayists should list Gartner's duct as a possible source of this lesion.

Embryologically this duct represents only that portion of the Wolffian duct located in the broad ligament between the uterian tube and the ovary and termed by the B. N. A. Classification as the ductus epoophoron longitudinalis. Many histologists note the presence of minute glands, the glandulae urethrales, and pit-like depressions (lacunae urethrales) which open into the urethral canal. One group of these glands on each side possesses a minute common duct known as the ductus paraurethralis, which opens near the urethral orifice. It is believed

by some that these latter glands represent the prostatic glands of the male. Striped muscle fibres are present on the outer aspect of the smooth muscle coat of the urethra. In the upper part of the canal these fibres form a complete ring-like sphincter, but in the middle and lower parts the striped muscle fibres, though present in front, are absent on the posterior wall of the urethra and at this level they pass backward on the posterior aspect of the vagina and enclose the latter passage, together with the urethra, in a single loop of muscle tissue. The lower fibres, therefore, form a urinogenital sphincter.

The physiologic functioning of this sphincter can be clearly demonstrated in the sensitive subject by slight mechanical irritation of the vaginal introitus. The assumed etiology of urethral diverticulum thus becomes less obscure when we have knowledge of such an anatomic arrangement which is capable of producing a physiologic stricture of the terminal urethra, together with the paraurethral ducts, when the other necessary exciting factors of trauma and (or) infection are added. Intermittent distention of the urethra by urine under pressure from above completes the etiologic triad.

Although theoretically the condition may occur in early life, all the proven reported cases are in adults. In our cases the ages ranged from 26 to 61 years. Symptoms are largely local and definitely referable to the lower urinary tract. Chills, fever and backache occasionally occur, suggesting an ascending pyelonephritis. Frequency and dysuria are the most usual symptoms. Dyspareunia is not uncommon. In Menville's analysis of 80 cases hematuria occurred as an initial symptom in nine cases. Other symptoms listed are partial incontinence, intermittent discharge from the urethra, pain in the region of the urethra, soreness in the vagina, and backache. While symptoms may be periodic in occurrence, they are usually progressive in severity.

When pus cells are noted in a carefully collected specimen of passed urine in which vaginal contamination is excluded and then no pus is found in a catheterized specimen soon after, the presence of urethral diverticulum should always be suspected. When vaginal examination shows the presence of

a rounded cystic mass on the anterior vaginal wall apparently attached to the urethra, posterior to the introitus and when pressed upon causes a small amount of cloudy urine or pus to flow from the urinary meatus, the diagnosis is certain.

Endoscopic examination and identification of the urethral opening or openings by inspection or passage of a ureteral catheter into the diverticulum, and x-ray examination following injection of the sac with proper medium, constitute the usual necessary procedures for proper and careful study.

Complete surgical removal of the sac with closure of the opening in the urethra is the only treatment of value. This is curative. Any palliative measures, such as dilatation of the urethra with sounds, irrigation or massage of the sac, or enlarging the opening into the urethra, except perhaps in those of smallest sizes, will provide only temporary improvement at best.

The following operative procedure is recommended in the majority of these cases. The patient is placed in lithotomy position and a No. 18 soft rubber catheter passed into the bladder to define the urethra. We have not found it necessary to pass a tractor into the bladder, nor resort to the aid of traction by a Foley catheter to bring the operative field into better view. Too much distortion of normal anatomic relations predisposes to technical disaster. But this is purely a personal preference. A weighted speculum is placed in the vagina. A transverse incision is then made over the prominence of the tumor. In our opinion, transverse incision of the vaginal mucous membrane is preferable to the longitudinal, as it permits of easier dissection and, when the wounds are closed, suture lines do not lie directly over one another. After the vaginal flap has been dissected from the urethra the sac of the diverticulum is carefully freed from its attachments. Its fundus is then opened and its contents, if any, evacuated. A No. 4 ureteral catheter is then passed through the opening in the urethral floor and out the meatus. The sac is then amputated, leaving a small cuff at the ostium. A purse string suture is placed around this opening and the ends tied to the end of the catheter, but not tied to each other. The catheter is then pulled out of the urethra.

This, of course, carries the ends of the suture with it and thus insures complete invagination of the neck of the sac into the urethral canal. Interrupted sutures of No. triple or double zero chromic catgut are then introduced into the submucosal and muscular layers of the urethra to close and reinforce the floor of the urethra. The transversely incised vaginal mucous membrane is trimmed of excess tissue and then closed with interrupted sutures of No. double zero chromic. The temporary purse-string suture is then removed by gentle traction on one free end.

About thirty years ago, Crenshaw described a procedure similar to this in dealing with vesicovaginal fistulae. In this method no suture remains which has pierced the mucous membrane, and hence subsequent leakage is much less likely to occur. At the conclusion of the operation a number 16 Foley catheter is introduced into the bladder and is permitted to remain for about a week. Antibiotic agents are administered routinely. When the walls of the sac are necrotic, such a procedure as the one described above would not be possible and closure of the opening must be accomplished in the best possible manner.

In the past two years we have seen six cases of diverticulum of the female urethra. All of these were operated upon. To date all have recovered. Resume of these is given in brief.

1. Mrs. J. G., age 61, para 2, operated on 8-20-48. Chief complaints: Burning on urination, urinary frequency, and slight leakage of urine at times from the urethra. These symptoms she attributed to prolapse of the bladder. Physical examination revealed the presence of a small cystic mass in the anterior vaginal wall, situated behind the urethral meatus. Crepitation could be elicited on palpation. Cystoscopic examination was essentially negative and no opening into the floor of the urethra could be demonstrated. However, at operation a characteristic diverticulum sac was dissected free. It contained two small stones and a small amount of purulent material. Plastic repair of both vaginal walls was also done. Convalescence was uneventful. This patient was last seen about two months ago and was much improved, but complained of some urethral

soreness. This was relieved by dilatation with sounds to 26 French.

2. S. C., colored female, age 26, operation 1-15-50. Chief complaints: Dyspareunia, severe dysuria, and frequency both day and night. No history of hematuria and no back pain noted.

Physical examination showed the presence of a tender cystic mass in the usual location of urethral diverticulum. Digital pressure on the sac expressed a small amount of cloudy urine from the meatus. Operative convalescence was complicated by a breaking down of the vaginal suture line, but there was no urinary leakage following the removal of the urethral catheter, and the vaginal wound soon healed by granulation without resuture.

3. Mrs. S. B., age 37, para 2, complained of severe pain on voiding for the past eight years. This pain was much worse for the past three months. No history of hematuria. She had previously been examined repeatedly with negative findings. On physical examination there was found a soft, lime-sized cystic mass in the mid-line of the anterior vaginal wall about 2 cm. posterior to the urinary meatus. Digital pressure on the sac caused cloudy urine to flow from the urethra. A single opening into a diverticulum was demonstrated on the urethral floor $1\frac{1}{2}$ cm. from the meatus. Postoperative convalescence was uneventful. Stay in the hospital was only six days.

4. Mrs. L. F., age 33, para 1. For the past two years this patient had recurrent attacks of pain in voiding and at times a dribbling of urine. She had been cystoscoped many times and at one seance an abscess of the urethra had been opened.

To the left of the urethra and well behind the meatus, there was a small and very tender mass which was firm and not fluctuant. No opening into the urethra could be demonstrated. Treatment in the case consisted of incision and drainage of a small abscess. A retention catheter was placed in the bladder. There was so much acute inflammatory reaction it was not considered wise to make an extensive dissection. Recurrence was expected but none has been reported to date. Operation was 9-28-48.

5. Mrs. M. E. Y., age 43. Chief complaints: Feeling of heaviness and pressure in vagina;

some difficulty in voiding, and sensation of not completely emptying the bladder. Duration of symptoms was about six months. At examination there was found a cystic mass about $1\frac{1}{2} \times 1\frac{1}{2}$ cm. in anterior vaginal wall just posterior to the meatus. At operation the sac was completely enucleated. Opening into the urethra was demonstrated at the level of the juncture of the distal and middle third.

6. C. F. B., age 41, para 2. Complained of more or less continual frequency and burning for the past three months. There had been recurrences of the same symptoms at intervals for a period of many years. The first episode was accompanied by hematuria.

Physical examination showed the presence of a rounded, fluctuant, cystic tumefaction in the anterior vaginal wall posterior to the urethra and about 2 cm. from the meatus. Pressure upon it caused a cloudy urinous discharge from the urethra. Operation was performed as outlined above. Convalescence was uneventful.

In conclusion, permit us to make the following summation:

1. Diverticulum of the female urethra is not a very rare clinical entity but a correct diagnosis is made far less often than is warranted.

Although the clinical symptoms are varied and are not pathognomonic, the physical findings are characteristic and specific. Greater detailed observation of the terminal urethra and periurethral structures is urged in every gynecologic examination.

2. It is quite likely that proponents of both the congenital and the acquired theories of etiology are correct. The condition develops as a sequence of events, rather than from a single cause.

3. Detailed description of the operative procedure which has proven successful in our hands has been presented.

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As in the case of other highly infectious diseases, the spread of tuberculosis can only be controlled by the isolation of the patients with active, sputum-positive infection from those who are susceptible to the disease but who have not yet contracted it. This is not being done and cannot be done among the American Indians for whom hospital accommodations are not provided by the Bureau of Indian Affairs and for whom funds are not available to expand the contractual service with non-government-operated sanatoriums. —Fred T. Foard, M. D., *J. A. M. A.*, February 4, 1950.

IMPORTANCE OF FLUOROSCOPIC POSITIONING OF THE GASTRIC TUBE

JAMES F. CRENSHAW, M. D.
Birmingham, Alabama

Although the value of the gastric analysis examination as a significant part of an adequate gastro-intestinal work-up has recently been questioned by some,^{1,2} it remains that this relatively simple laboratory procedure furnishes usable information concerning the stomach's secretory capacity. Many refinements of the original technic have been accomplished through the years. Phillip Physick in 1812³ was first in our country to use the soft rubber catheter to evacuate the stomach of its contents and to supply food and medicine by this method. To Ewald and Oser,⁴ however, goes credit for the initial demonstration of introducing a soft rubber tube into the stomach without the aid of a mandrin. In 1869 Kussmaul applied the stomach tube as a therapeutic agent for the relief of gastric dilatation, while Leube in 1871 made use of the tube as a diagnostic agent. It must be remembered, also, that Ewald, Boas, Einhorn, and Rehfuess individually contributed notably to the advancement of gastroenterology through their studies of the stomach secretions.

Much has been written concerning the various analyses to be made once the gastric contents have been successfully withdrawn. A paucity of information, apparently, is available regarding the correct procedure for adequate positioning of the tube in order to obtain the best withdrawal possible. Even in the hands of the most experienced, satisfactory positioning is often not an easy

task. It is the purpose of this paper to show the importance of the fluoroscopic following of the tube for proper positioning within the stomach. The proper position is the tube tip lying well within the antrum, in the most dependent part of the greater curvature. For the individual of normal proportions, a tube distance of 55 cm. separates the lips and antrum; the height of the subject will, of course, vary this measurement.

In this study, 100 consecutive subjects undergoing gastric analysis were observed fluoroscopically for correctness of tube position. The tubes were passed by skilled technicians of several years' training under ideal clinical conditions. When it was thought that the tube was ideally situated within the stomach, the tube measurement was taken in centimeters, and the patient was brought to the adjoining x-ray room for observation. Levin tubes were used in all cases; each tube was carefully inspected and considered adequate for routine use.

Of the 100 cases studied, only 31 were seen to be positioned correctly, the remaining 69 were considered incorrect for adequate gastric analysis. Of the 31 correct positions, there were 19 with ideal placements (without the tube curving upon itself). Stomach positions were judged by later x-rays, recognizing that a barium-filled stomach is not as in a fasting, contracted state.

Measurements in centimeters for what appeared to be the best tube position, *before fluoroscopic adjustment*, varied from 50 cm. to 107 cm., the range 60-75 cm. producing most satisfactory results.

It is well recognized that many factors contribute to a proper placement of the gastric tube. The skill and experience of the tube passer, as well as the cooperation of the patient, are major factors. The surroundings, whether noisy or quiet and relaxing, also play a part. The type of tube used, its flexibility, its tip—whether metal or rubber—influence the technic. It is naturally understood that if a good sample of gastric juice is readily obtained and the techni-

From the Department of Gastroenterology, Seale Harris Clinic.

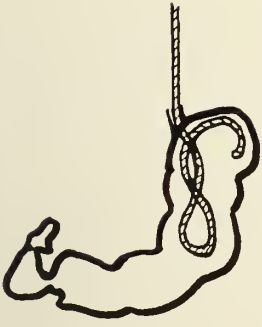
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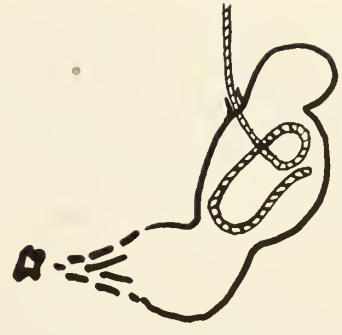
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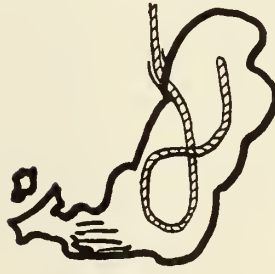
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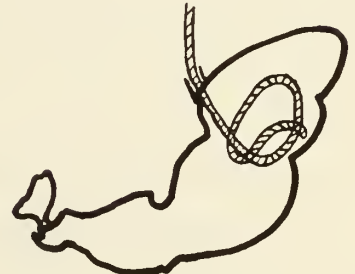
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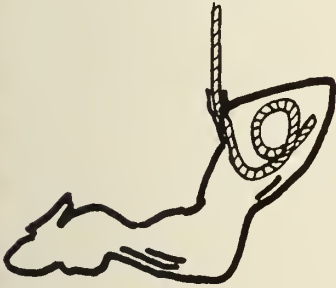
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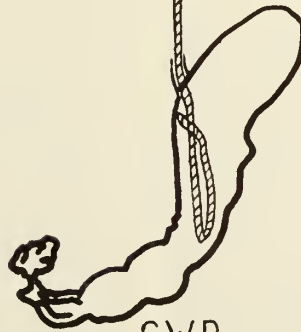
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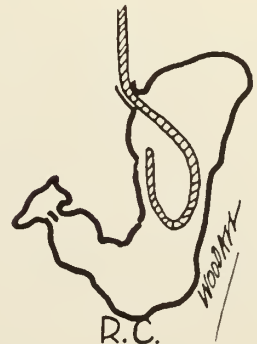
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ILLUSTRATIONS OF SEVERAL INCORRECT TUBE POSITIONS
AT TIME OF FLUOROSCOPIC ADJUSTMENT

cian is reasonably certain that the tube is in correct position, no fluoroscopy is necessary. Variations in the gastric juice content at different stomach levels are known to occur. However, in all cases, should time permit and if a fluoroscope is available, it is helpful to know that the tube is adequately stationed.

CONCLUSION

The fluoroscopic following of the gastric tube is of considerable help for proper placement and adjustment of this device and should add to the accuracy of the gastric analysis. Without the use of the fluoroscope a significant number of incorrect placements is evident, when using a tube such as the Levin type.

PEDIATRIC CASE REPORTS

Edited by
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Case presented by
Benjamin P. Clark, M. D.

Hypertension as a presenting sign or symptom is not common in children. However, it does occur and should call for a very careful search for a possible etiologic factor. Several recent reports of hypertension in children, associated with unilateral renal atrophy, make it desirable to investigate thoroughly the urinary tract in all such cases. We are reporting a case of hypertension in a nine year old girl with a contracted kidney successfully treated by nephrectomy.

The patient was first seen by us in April 1947. One month previously she had had an attack of "influenza" complicated by acute otitis media. Her family physician had found albumin in her urine and had noted her systolic blood pressure to be 160 mm. mercury. It was known that her blood pressure had been normal during the fall of 1946. An older sibling had died during 1945 of hypertension with a systolic blood pressure as high as 300 mm. mercury and there had been albumin and pus in the urine. No kidney studies were done and permission for autopsy was refused.

Physical examination of our patient revealed a well developed and well nourished child. Temperature was normal; pulse rate was 72 per minute. Fundiscopic examina-

tion revealed normal discs and no flame areas. The retinal arteries showed increased tortuosity, increased light reflex, and areas of constriction. The A-V ratio was 1:4. No hemorrhages or exudates on the retina were seen. Examination of the heart revealed no murmurs or signs of enlargement. The rate was regular but the action was tumultuous and forceful. Blood pressure in each arm was 170/140 and in the left leg was 180/-144. There were 4.7 million erythrocytes, with 14 Gm. hemoglobin, and 13,200 leucocytes, with a normal differential. Urinalysis showed specific gravity of 1.015, albumin and sugar negative, and a rare pus cell. No red blood cells or casts were found. The phenolsulfonphthalein test showed 62.5% of the dye secreted in two hours.

An intravenous urogram was done. The right kidney was well visualized and appeared normal. There was little concentration of the dye in the left kidney and the outline of this organ appeared small and irregular. Retrograde pyelogram showed the left kidney to be contracted. The infundibula were narrowed and elongated. The calices were poorly formed. The kidney appeared small. Under ether anesthesia a left nephrectomy was done by Dr. H. R. Owen. By the time the operation had been completed the blood pressure was 135/75. Her postoperative course was without incident. On the first postoperative day the blood pressure was 130/90 and on the second day was 130/90. On the fourth postoperative day it had fallen to 100/80. Fundiscopic examination on the fourth day showed no localized spasm of the arteries and the A-V ratio was 1:2½. The retinal vessels were less tortuous.

The child's blood pressure never again rose to more than 110/80 and on the day of discharge was 104/70. This child has been followed as an outpatient now for a period of more than two years. At no time has she had any elevation of blood pressure. She has recently had an upper respiratory infection associated with a rather marked pyuria but this has cleared at this time without having produced any elevation of the blood pressure.

Pathological Report: The left kidney was small and lobulated, measuring 6x4x2 cm. and weighing 19 Gms. About half of the surface was shrunken and dark brown and

the cut surface was distorted in the region of the shrunken portion. The cortex measured 3 mm. In the grossly normal portion of the kidney, 22 of 100 glomeruli were hyalinized. The glomeruli were of a mature type. In the shrunken portion virtually 100% of the glomeruli were hyalinized. Many showed old and some showed recent infarcts. A few showed thickening of the capsule with hyaline debris. The small arteries and arterioles in this portion were partially obliterated. The tubules had disappeared.

The literature contains several recent reports of hypertension in children, associated with a contracted kidney. One of these includes an excellent review of the literature on this subject. In children, only ten cases have been reported in which the blood pressure has remained normal for at least a year following operation. In our case, the 11th, blood pressure has been normal for more than two years.

It should be noted that the duration of the hypertension in our case prior to surgery was short, and this is most important. Most writers feel that the duration of the hypertension should not exceed two years if operative treatment is to be effective. In children it is difficult to estimate the length of time necessary for persistent hypertension to produce irreversible changes. The superior recuperative and regenerative powers of the child make it unsafe to assume that such changes are permanent. For these reasons we believe that the prognosis for the relief of hypertension from unilateral renal disease in children may be exceptionally good as compared to the equivocal results so far obtained in adults.

Nephrectomy was performed in a child, 9 years of age, with hypertension due to unilateral contracted kidney. The blood pressure has remained normal for more than twenty-four months following the operation.

Among the 410 persons who died from tuberculosis in Minnesota in 1949, 259 were 50 years or older, of whom 129 were 65 years or over. Apparently the tubercle bacillus is making its last stand in old men. Of the 259 persons of 50 years or older who died in 1949, only 72 (27.8 per cent) were women.—J. Arthur Myers, M. D., *Journal-Lancet*, April 1950.

Intestinal Obstruction—Certain principles in the operative treatment must be recognized and respected. Manipulation of the intestine must be held to a minimum. If strangulation is present, superficial exploration of the abdomen will almost invariably reveal its location. Obviously, if a condition such as intussusception is present, superficial palpation will reveal a mass, thereby making further exploration unnecessary. In the absence of a mass or obvious location of the obstruction, it may be necessary to examine various loops of intestine. If decompression has been quite effective, there may not be significant dilation of the intestine proximal to the obstruction. However, in ordinary circumstances the surgeon may be guided by observation of dilated loops proximal to the obstruction and collapsed loops distal to the obstruction. Frequently, indeed, observation of such conditions will lead the surgeon rapidly to the point of obstruction.

In general, if there is active obstruction, resection should be avoided if possible, but obvious gangrenous loops of intestine or loops without viability cannot be returned to the peritoneal cavity. When resection is done, it will occasionally be life-saving to bring the strangulated loop outside the peritoneal cavity as an obstructive resection. The wound then may be closed around the two branches of the loop. This procedure is much more applicable to obstructed strangulated loops in the large bowel than to those in the small bowel because the postoperative loss of fluid and electrolyte from the small bowel is so much greater than from the large. (It should be noted in passing that resections can be carried out more boldly than in the past, provided adequate blood is given during and after operation.)

Another precaution which must be respected at all times is that anastomosis must not be carried out in an area where the intestine is edematous. In other words, the resection must be wide enough so that the anastomosis can be performed through relatively normal intestine.

With very few exceptions, gastrointestinal decompression must be instituted after operation. If the Miller-Abbott tube or Levine tube was functioning before operation, it should be left in during and after operation. This will maintain decompression so that pressure of distention against a suture line will be prevented. How long to continue decompression after operation cannot be determined by a simple rule. However, with few exceptions, it must be maintained for 48 hours after resection and anastomosis have been carried out. After 48 hours, if a moderate amount of distention is present, perhaps because of inefficient decompression, it may be necessary to continue decompression for another day. Occasionally when the tube is removed and the patient is given fluids by mouth, distention reaccumulates. In such circumstances it may be necessary to replace the tube after 24 to 36 hours. Auscultation of the abdomen may help in determining when to remove a tube or to begin feedings.—Cole, *California Med.*, Nov. '50.

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TREATMENT OF BARBITURATE POISONING

“In a series of 29 cases of barbiturate poisoning observed on the medical service of the Knickerbocker Hospital, the treatment of choice proved to be pentylenetetrazole (Metrazol). In spite of increasing difficulties that various state and local laws have placed in the way of persons desirous of obtaining barbiturates, these drugs are still, as a group, among the poisons most commonly used with suicidal intent. Sollman stated that only carbon monoxide is more commonly used, as one seventh of all cases of poisoning (excluding those due to carbon monoxide) treated in hospitals of the large cities of the United States in recent years were due to barbiturates.”

The above are the opening sentences of the article by Jones, Dooley and Murphy¹ inquiring into this ever present and increasingly important subject. The authors go on to say that “The treatment of barbiturate poisoning has long been unsatisfactory, although a wide variety of drugs such as caffeine, strychnine, calcium gluconate, picrotoxin, amphetamine, sodium succinate, ephedrine and pentylenetetrazole (Metrazol) have been used as antagonistic agents. The principal means of elimination of the drugs from the body is the kidneys, but depression engendered by the drug tends to suppress formation of urine or materially to decrease it. These antagonistic drugs are used to hasten oxidation and detoxification of the barbiturates in the body as well as to increase urinary secretion.

“As generally written and as taught by many medical schools, picrotoxin has been assumed to be the drug of choice in treatment of barbiturate poisoning, although it is always labeled as ‘dangerous’ if not used properly. Boyd stated that picrotoxin might even hasten death in severe cases if not properly used. Pentylenetetrazole is the other analeptic usually mentioned but not emphasized.”

The New York investigators inform us that “Lavage and purgation are almost always mentioned and frequently used in treatment of patients with barbiturate poisoning. However, it is our belief that any

1. Jones, A. Warren; Dooley, James, and Murphy, John R.: Treatment of Choice in Barbiturate Poisoning, J. A. M. A. 143: 884 (July 8) 1950.

patient in coma subjected to this treatment runs a definite risk of hypostatic pneumonia, and we do not advise it for this reason. It is also of questionable value when a long time has elapsed between ingestion of the drug and treatment."

And we are further told that "Intravenous fluid therapy used too vigorously puts an added strain on the cardiovascular system and is to be deplored. However, it is a useful adjunct to elimination of the barbiturate drug when properly used. Pentylenetetrazole (Metrazol) is a relatively safe drug to use in large quantities and can prevent many deaths as the result of poisoning with barbituric acid derivatives if so used. Further, it can be used by any physician anywhere for immediate relief until the patient can be transported safely to a hospital, where further treatment can be instituted."

Jones, Dooley and Murphy have rendered a service in analyzing their cases of barbiturate poisoning and in discussing various aspects of its treatment. It is good to realize that Metrazol is rated highly by them and it certainly can be given by any physician whenever or wherever he encounters a patient excessively drugged with barbiturate. It is unfortunately true that the laws regulating the sale of the barbiturates are none too well enforced and some physicians are inclined to be careless in dispensing these powerful sedatives. And many persons—neurotics, alcoholics, drug addicts, the unstable generally—very often take excessive or even enormous doses of barbiturates either with or without suicidal intent. It is to be hoped that the laws regulating the sale of these compounds will be tightened and enforced. But, in the meantime, it behooves all practitioners who may encounter such tragedies to keep informed as to the best methods of treatment and also to carry Metrazol and other stimulants in their bags.

NEW INFLUENZA VIRUS DISCOVERED

A new virus strain, which may prove to be another type of influenza, has been found in an epidemic of acute respiratory disease by the Armed Forces Epidemiological Board, according to an article appearing in the current issue of *Science*.

The new strain was discovered during an

investigation conducted earlier this year in Michigan by the Board's Commission on Influenza, which operates under the auspices of the Army Surgeon General.

The Armed Forces Epidemiological Board furnishes advice to the Armed Forces in establishing uniform and effective epidemic prevention and control procedures. Established in 1941 as the Army Epidemiology Board, its function was expanded last year to study medical, operational, and research problems of the three services.

The Commission, one of nine now operating under the Board, has been searching for causes related to some of the other acute respiratory epidemics.

Dr. Thomas Francis, Jr., director of the Commission, Dr. J. J. Quilligan, Jr., and Dr. Elva Minuse cooperated in the studies. All are members of the Department of Epidemiology, School of Public Health, University of Michigan.

Studies up to the present have disclosed two clear-cut categories of influenza, A and B, as well as some rather pronounced differences between sub-strains belonging to each of the types.

The new virus—which could be called Influenza C—was isolated during a mild outbreak of influenza associated with A-prime strains of virus which occurred in Ann Arbor last spring.

Efforts to relate the virus to other known respiratory diseases were unsuccessful. Studies with animal serums failed to show a relation to known influenza virus, to Newcastle disease virus, to mumps virus, the Texas, Ohio and Connecticut strains of Coxsackie virus, or to the pox groups of virus. All tests showed negative results to these common infectious diseases, indicating that the newly discovered virus seems to be serologically and immunologically distinct from previously identified strains of influenza virus.

Of particular interest was the testing of serums from a group of children, ages 1-5½ years, in the studies. Tests of serums obtained from patients among the students at the University of Michigan ill with influenza during the epidemic phases of 1947 and 1950 showed little reaction to the new virus, indicating the possibility that adults might

not show a measurable response to infection with this virus. Attention was then turned to young children who would be less experienced and whose antibody responses would be more likely to reflect the occurrence of infections.

Blood samples tested in 1947 from children who had been vaccinated with the PR8 strain of type A influenza in the fall of 1946 showed a rise in antibodies to the virus, indicating that there had been a wide exposure to this virus.

Tests of serums from another group of children, taken in 1947, showed rises in antibodies to both the A-prime, a sub-type of A group influenza, and the new virus. This gave evidence that the two diseases were concurrent in the population and of about the same incidence during the spring of 1947, and that they are immunologically independent.

A high incidence of antibodies in adults tested strongly indicated that the population has been thoroughly seeded with the new virus strain. Research also showed that the virus has been circulating since at least 1936.

Symptoms in adults are not yet well outlined, but fever, cough and the ordinary head cold were the common signs in children.

"The association of the epidemic disease with influenza, the basic clinical picture, and the wide distribution of antibodies in the human population, as well as the serological and immunological characteristics of the virus readily invite consideration of the name, influenza C," the paper concludes. "Further studies, a number of which are under way, will determine the appropriateness of this suggestion."

RESISTANT RICKETS

Many children are suffering from rickets resistant to moderate doses of vitamin D, according to Dr. John F. Holt of the Department of Roentgenology of the University of Michigan, Ann Arbor, writing in *The American Journal of Roentgenology and Radium Therapy*.

He terms this type of disease as vitamin D resistant rickets or refractory rickets. It is different from ordinary rickets, he says,

because it takes spectacularly large doses, ranging from 50,000 to 1,000,000 units per day, to effect a cure.

"The refractory variety has assumed increasingly greater importance in the United States," Doctor Holt writes in the medical journal, which is published primarily for physicians who specialize in x-ray diagnosis and treatment. He added that "undoubtedly many examples of the disease remain unrecognized."

Why the intestinal tract does not absorb what would ordinarily be ample amounts of vitamin D in these cases is unknown.

"The relatively frequent occurrence of the disease in several members of a family indicates that the peculiarity is a hereditary one," Doctor Holt writes. He said that in refractory rickets the disease shows up in early childhood and continues sometimes until the child is 12 years old.

Rickets exists in all parts of the world but particularly among the poor of the larger cities, who are badly housed, ill fed and who get little sunshine. It is most prevalent among Negro and Italian children. Rickets increases in the autumn and through the winter, reaching its maximum in March.

In rickets the child first complains of soreness, and cries when an attempt is made to move him. Gradually the tissues become soft and flabby; the skin is pale, and from a healthy, plump condition the child becomes puny and feeble. Muscular weakness may be marked, particularly in the legs, and paralysis may be suspected. The bones eventually show the most important changes, particularly the ends of the long bones and the ribs.

Doctor Holt warned his x-ray colleagues of certain pitfalls in making a diagnosis. An x-ray diagnosis is often made, he said, but added that it "may be retracted when it is learned that the patient had had adequate vitamin D intake with failure to effect a cure."

Doctor Holt cited one case of a five year old girl who underwent ordinary vitamin treatment for bowlegs, which had been getting progressively worse. It was found that 50,000 units and then 100,000 units of vitamin D were insufficient to heal the patient's rickets. Then she was placed on 500,000 units per day.

"During the ensuing 17 months," he wrote, "the patient's rickets healed completely only to recur when the dosage of

vitamin D was moderately reduced. When the vitamin D intake was again increased, the rickets responded once more."

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

SOMETHING MORE PRECEDES

W. A. Dozier, Jr.

Director of Public Relations

Back before last May's primary an article appeared in this column concerning a person's privilege and duty to vote. Since that time everyone has been cognizant of a huge amount of material designed to get people to the polls. The newspapers have bemoaned the fact that too few persons exercise their privilege of voting. The radio announcers have exhorted everyone to vote and to realize that freedom is everybody's business. Civic organizations have instituted campaigns for the purpose of getting out the vote. All of this activity has been to the good, but there has been a definite omission in all of it.

There may have been some who included this lacking facet; but if there were such people, they were few in number, and they failed to emphasize to any extent what seems to be of great importance. Too few people, it seems, realize or at least properly emphasize the fact that exercising the privilege of voting carries with it a definite responsibility. Let it be said before going any further that this article neither favors nor opposes the recently demised Boswell Act, which act seems to be a political move which may or may not have been designed for politicians. Nor is the purpose here to take sides on the controversial issue raised by an article in a recent issue of the American Legion Magazine, which article dealt with block voting of bought votes within a minority group. In other words, the political tempest being experienced at present, whereby one group is played against another, has no legitimate place in the thoughts behind the following paragraphs—even though reference may be made to aspects of that fracas. The sole purpose here is to re-emphasize the thought that education to

assume the responsibility of voting should precede the granting of the privilege of the franchise, and this idea is applicable to all groups alike.

It is believed that everyone would at least render lip service to the above thesis; and since this is fairly widely accepted, the question of how to insure such a situation becomes paramount. This question, like practically any other, is not simple, and one single answer cannot comprise the total idea necessary to correct a situation. As is usual, this article cannot be definitive but rather must look hastily at only a few of the facets.

A campaign to get out the vote is fine. The only trouble is that as soon as one has voted he too often completely forgets the matter of government until someone comes for him and takes him to the polls during the next election. In the interim there is no thought as to what is going on in world, national, state or even local governmental affairs. Oh, some incidents and some new laws may shake him from his lethargy when he is concerned to the point of having to act, but by and large he just lets things rock along. As a consequence when it comes time to vote again, this person has no conception of what the issues are or how any candidate stands. Therefore the various candidates, in an effort to get votes, must play up the sensational and the emotional and play down too greatly the really important issues.

The problem of changing the situation in the above group is practically the same as touching those people who at present do not bestir themselves to vote and those who vote party lines blindly without ever looking into the matter enough to see what they are actually voting for. Somehow these people have to be brought to the realization that vital issues are at stake. Newspapers, radio, pamphlets and the like are able to touch some; but there are too many who are im-

pervious to this approach. Perhaps the time to do any real good with these is past; perhaps we missed the boat when these people were going through their formative periods.

One other group needs special mention and that is the body of people who are willing to sell their votes. This problem is doubtlessly a much deeper one than that presented by the above groups. Yet the answer again seems to lie in education which was needed at an earlier date.

All of our problems could have been forestalled, but they weren't. Some means needs to be found for answering these problems, but of even greater importance is the necessity of being sure that the present younger

generation does not miss this important aspect of education. That means that proper training in the home and in the schools must be a certainty. The only persons who can do this are the parents of our younger generation. In many instances it will mean giving more time to your kids, and above all it will mean taking an interest in your child's schooling. Too many people merely leave that to the schools and never know just what is being taught or how it is being presented. It is an added responsibility for many but one that every parent should assume to be sure that the future managers of our society are properly founded in the assumption of their responsibilities.

WOMAN'S AUXILIARY

Mrs. J. G. Daves, Cullman, President

NATIONAL CONFERENCE REPORT

Mrs. J. Gordon Daves, President, and Mrs. Fred D. Reynolds, President-elect, attended the Seventh Annual Conference of State Presidents, Presidents-elect and National Chairmen of Standing Committees held on November 2 and 3, 1950 at the Hotel LaSalle, Chicago, Illinois.

The National President, Mrs. Arthur A. Herold of Shreveport, Louisiana, opened the meeting with the Pledge of Loyalty: "I pledge my loyalty to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation, and ever sustain its high ideals." Roll call revealed that only Delaware, Wyoming, Hawaii, and the District of Columbia were not represented. All national officers and chairmen of standing committees were present. This was an unusually fine attendance record.

The theme of the program was Public Service Through Health Education, and the manner in which the two-day session was presented was in accordance with suggestions made by state presidents and presidents-elect by letter two months prior to the conference. Rather than the usual reports of state presidents, this time was utilized much more advantageously in panel discussions which the state presidents presented. National chairmen, Mrs. Leo J. Schaefer,

Organization, Mrs. Theodore E. Heinz, Public Relations, Mrs. Harry F. Pohlmann, Program, Mrs. Joseph W. Kelso, Today's Health and Mrs. Edgar E. Quayle, Legislation, each acted as moderator in directing the five panel discussions dealing with their branches of Auxiliary work. Our President, Mrs. Daves, presented an interesting paper in the panel discussion of Today's Health, her topic dealing with nursing scholarships. She made direct reference to a county Auxiliary in Alabama that had chosen to make the sale of Today's Health to their husbands a means to establishing a scholarship loan fund.

Outside speakers heard at intervals during the two days were as follows: Dr. Ernest B. Howard, Assistant Secretary, American Medical Association; Dr. George M. Lyon, Special Assistant in Atomic Medicine, and Chief, Radio Isotope Section, Veterans Administration, Washington, D. C., whose subject was "A New Challenge to American Medicine"; Dr. W. W. Bauer, Director, Bureau of Health Education, American Medical Association; Dr. Thomas G. Hull, Director, Bureau of Exhibits, A. M. A.; Mr. Ralph Greer, Director, Bureau of Motion Pictures, A. M. A.; Mr. Frank Cargill, Circulation Manager, Today's Health; and Miss Leone Baxter and Mr. Clem Whitaker, Directors, National Education Campaign, American Medical Association.

Mrs. Harold F. Wahlquist, National Presi-

dent-elect, was chairman of the conference, and presided with the greatest of ease and charm. Mrs. William M. Gambrell, Austin, Texas, was elected to serve as constitution secretary of the conference. First, Second, Third and Fourth Vice-Presidents, Mrs. Leo J. Schaefer, Salina, Kansas, Mrs. W. E. Hoffman, Charleston, W. Virginia, Mrs. Mason G. Lawson, Little Rock, Arkansas, and Mrs. John Z. Brown, Salt Lake City, Utah, were introduced; as were Directors, Mrs. David B. Allman, Mrs. Scott C. Applewhite, Mrs. Ralph Eusden, Mrs. William W. Potter, Mrs. Robert Flanders, Mrs. Frank Gastineau and Mrs. John S. Bouslog. Short reports were given by the following chairmen: Mrs. Scott C. Applewhite, Finance, Mrs. James P. Simonds, Publications, Mrs. Eustace A. Allen, Revisions, and Mrs. Rollo K. Packard, Reference. Also reporting were Mrs. Jesse D. Hamer, Historian, Mrs. Luther H. Kice, Parliamentarian, and Mrs. George Turner, Treasurer.

Space does not permit a detailed review of the wealth of material brought by each of the participants in this two-day session. However, Auxiliary members will not be deprived of the pleasure of getting this information. The conference will be covered most thoroughly in the December issue of the "Bulletin." Please, won't every Auxiliary member become a subscriber to the Bulletin? To be a real good Auxiliary member, this is a must. It is as a textbook to a student. As adults we should never cease to learn, and knowing the workings of our Auxiliary should be of greatest importance to each of us. The cost of the subscription is only \$1.00. It is published quarterly, and hence you will always look forward to its coming. It will not be like some of the other magazines and books to which you now subscribe that come so often you hardly have a chance to read one issue before another one comes. Subscribe to the Bulletin today, by sending your check to the Office of the Auxiliary, American Medical Association, 535 North Dearborn Street, Chicago, 10, Illinois, in order that you will not miss getting the December issue covering the Conference.

CALHOUN COUNTY NEWS

In Anniston, on November 2 from 5:30 P. M. to 7 P. M., the Calhoun County Medical

Society and Auxiliary honored Dean Florence Hixson, University of Alabama School of Nursing with a tea and reception at the Country Club. Around three hundred nurses attending the 37th Annual Convention of the Alabama State Nurses Association called during the afternoon.

Mrs. Walter Bragg Smith, Executive Secretary of the Nurses Association, expressed deep appreciation to the Auxiliary for its efforts in making this such a delightful event. She said the nurses all thoroughly enjoyed the courtesy extended them by the ladies of the Auxiliary, and had a wonderful time as their guests.

THE NEED FOR NURSES

The need for more nurses has become acute, and as doctors' wives we should welcome the opportunity to assist in recruiting them. Before we can become effectual in our aid to this most worthy work, we must know something of the advantages the nursing profession offers those who might be interested in nursing.

No other profession offers more in personal satisfaction. Becoming a nurse is not an easy task. It involves plenty of book work and physical energy. There are discouraging moments with many trials and tribulations, but to overcome these dark days makes the challenge to victory more desirous. Every true nurse knows in her heart she gains far more than she can ever give. Any experienced nurse, asked if she would change her profession, would most certainly answer never!

As is true in every walk of life, every young person would not be qualified to progress in nursing education, and before trying to interest any young people we must learn to judge their aptitude in this field. To be a nurse, one must like people enough to put up with their varying moods. They must have the ability to get along with people of all social levels, all ages, and every economic status. They will be called upon to work side by side with other nurses, doctors, psychologists, nutritionists, social workers, practical nurses, trained attendants, and others, each with his own knowledge and special functions which combine to make the skilled health teams responsible

for many of the present-day advances in medicine.

A nurse must have the ability to think through a situation clearly and to use good judgment. This will come, to a great extent, with training, but one must have some of these attributes to start with. Poise, commonsense, and a sense of humor aid immeasurably in nursing.

Good health is of paramount importance. A nurse in poor health herself can not effectually aid other peoples' recovery, nor can she successfully teach them how to stay well. This does not mean that a nurse must be a tower of strength, for nursing is not unusually strenuous. It does mean, however, that a student will have to pass a physical examination before admission to a school of nursing, and must have a healthy outlook on life.

Besides the personal satisfaction in nursing, there is security too! Security means an assured job, at a good salary, with a protected future. Nursing offers all these in full measure, for the nursing and health needs of people know no season, no country, no age, no level of society. There are jobs awaiting nurses everywhere.

Perhaps no other profession offers so much in variety as the field of nursing, whether it is on the home, hospital, school, industry, or county, state, national or international level. There are limitless opportunities for those who desire prominence in their work, and are willing to work for it.

And so, Mrs. Doctor's Wife, you must know the necessities for nursing, and the advantages of nursing, and with this enthusiasm burning in your heart, you will be an inspiration to those who look to you for guidance.

Miss Frances Raley is now employed as Recruiting Officer in a joint program of the Alabama State Nurses Association and the State Hospital Association, and has her office in connection with the Hospital Service Corporation, 2119 First Avenue North, Birmingham. Miss Raley is a graduate of the Baptist Hospital School of Nursing, Birmingham, and received her B. S. in Public Health Nursing from Western Reserve University, Cleveland, Ohio. Miss

Raley has just recently returned to Alabama from Oregon where she was on the faculty of the University there. Mrs. Walter Bragg Smith, Executive Secretary of the Alabama State Nurses Association, has expressed hope that the Medical Auxiliary will cooperate with Miss Raley in every possible way. Our assistance will be greatly appreciated, so let's not wait to be called upon. Let's volunteer our services.

Miss Raley has available in her office much literature on nursing as recently published by the Committee on Careers in Nursing in New York. May we call special attention to two pamphlets in particular, namely, "Nursing and College, You Can Have Both!" and "Nursing, Career with a Future!" If you are between the ages of 18 and 35, either of these booklets will make you want to enter the profession yourself.

SUBSCRIPTION CONTEST

TODAY'S HEALTH

Woman's Auxiliary to the American Medical Association 1950-51 Contest

Eligibility: All County Auxiliaries affiliated with State Medical Associations and all State Medical Auxiliaries are eligible to participate in the contest which covers the period from September 1, 1950 to January 31, 1951.

Cash Prizes: The sum of \$400.00 will be divided into first, second, and third prizes for five groups.

Group 1. Auxiliaries with a membership of 1 to 18.

Group 2. Auxiliaries with a membership of 19 to 35.

Group 3. Auxiliaries with a membership of 36 to 99.

Group 4. Auxiliaries with a membership of 100 or over.

Group 5. State Auxiliaries.

Quotas: Prizes are based on your group quota and the number of subscription credits obtained. *Your quota is the number of members in your Auxiliary who have paid their Auxiliary membership dues at the close of your previous fiscal year.* This arrangement gives the Auxiliary with a small membership an equal chance with the larger ones in their particular group. For example, an Auxiliary that has twenty members and secures twenty subscriptions would have reached its quota and have a rating of 100

per cent. Further, if an Auxiliary has only twenty members and secures eighty subscriptions, it would have a rating of 400 per cent and win over an Auxiliary that has thirty members and secures ninety subscriptions with a rating of 300 per cent.

Credits: A one-year subscription will count as one credit; a two-year subscription as two credits; a three-year subscription as three credits; a six-month subscription as one-half credit. No distinction in credits is made in regard to new or renewal orders. In the event of a tie, the county sending the largest number of two-year and three-year subscriptions will be awarded the prize.

No Auxiliary will be given a cash prize nor special recognition unless it has secured at least twenty-five subscription credits. For example, if an Auxiliary has ten members and secures ten subscription credits its percentage will be 100, but in order to be eligible for a cash prize it must have the minimum of twenty-five subscription credits. Auxiliaries with a membership of twenty-five or over must have a percentage of 100 to be eligible for a cash prize.

No county Auxiliary will be given credit for subscriptions taken from members at large or other County Auxiliaries that are organized. However, if an Auxiliary member calls upon a physician or dentist who has placed his subscription to Today's Health direct with this office, special credit will be given that Auxiliary if a specific request is made. In making such credit requests, please provide the full name and address of the physician or dentist called upon and the approximate date the order was placed. This request for credit does not apply to orders sent through subscription agencies or direct to this office by laymen or institutions.

Student Group Study Plan: Credit for copies of Today's Health sold under the Student Group Study Plan are figured on a basis of one point for every twelve copies. This plan is one in which the teacher places a tentative order direct with this office for ten or more copies of the magazine each month. The order may be increased or cancelled with any issue provided we are notified in time. A special rate of 20c a copy (regular price 35c) is made with a free desk copy sent to the teacher. Each month a set of discussion questions based on the current

issue is mailed to the teachers without charge. The order may be paid for monthly or for the semester. There is no commission allowed the Auxiliaries on such orders.

Unpaid Subscriptions: If a subscriber authorizes the Auxiliary to enter a subscription for him and prefers to make payment direct to this office, forward the order to us with instructions for billing the subscriber. When sending in paid subscriptions together with unpaid subscriptions be particularly careful to indicate those that are paid and those that are not paid. *Do not submit unpaid subscriptions unless you have actually received authorization from the subscriber.* Unpaid subscriptions will not be counted in the Contest unless payment is received before January 31, 1951.

SUBSCRIPTION RATES

	Rate	Comm.	Remit to T. H.	Add'l. for Can- ada	Add'l. for For- eign
One-year	\$3.00	\$1.50	\$1.50	\$.50	\$.75
Two-years	5.00	2.50	2.50	1.00	1.50
Three-years	6.50	3.25	3.25	1.50	2.25
Nine-months	2.40	1.20	1.20	.38	.56
Six-months	1.60	.80	.80	.25	.38

SPECIAL RATES FOR PHYSICIANS AND DENTISTS

A special fifty per cent discount is allowed physicians, dentists, and Auxiliary members. In other words, you may quote these people the following prices: \$1.50 for one-year, \$2.50 for two-years, and \$3.25 for three-years. These special rates also apply to gift subscriptions which the doctor may wish to place. No commission is allowed the Auxiliary on subscriptions sold at these special rates, but they are credited to the Auxiliary.

SPECIAL CHRISTMAS RATES

To the lay public, wishing to place gift subscriptions, the following rates should be quoted:

	Pub. Price	Your Comm.	Remit to T. H.	Credit Allowed
1 one-year	\$3.00	\$1.50	\$1.50	1 credit
2 one-year	5.00	2.00	3.00	2 credits
3 one-year	6.50	2.00	4.50	3 credits
Each additional one-year subscription	2.00	.50	1.50	1 credit

Canadian subscriptions—50c additional per year
Foreign subscriptions—75c additional per year

Time Limit: All orders in envelopes post-

marked on and previous to January 31, 1951 will be counted in the contest. Mail in contest orders to Today's Health Department, 535 North Dearborn Street, Chicago 10, Illinois. Use the order blanks whenever possible. Send the original white copy to us and keep the carbon copy for your records.

IT'S YOUR CRUSADE, TOO!

The significance of the issue, "Compulsory Versus Voluntary Health Insurance," extends far beyond the medical profession. It involves the health, the economic welfare and the freedom of every American.

There is growing opposition to compulsory health insurance from increasing numbers of citizens who have studied the facts, but the spearhead of the crusade to keep politics out of medicine is the medical profession. The real responsibility for the success of the national campaign against compulsory and for voluntary health insurance is squarely on the shoulders of the medical and allied professions—on medical societies, their members, their families—their womenfolk!

What can women do? This is a campaign which can be won only if women play a vital, crusading part. Leaders among women must help to get the truth on this issue which so gravely affects the health and welfare of every American to every citizen in the country. No group is better equipped for that job than the women who are closest to the medical profession—the members of the Auxiliaries. As leaders in their own communities, states and areas, many Auxiliary members are already performing a titanic task. They are pointing out how personal and family health would suffer under Government medicine—and citing the facts to prove it.

They are telling their neighbors about the splendid prepaid medical and hospital care plans which now are protecting millions of Americans from financial shock in time of illness. They are reasoning people out of the dangerous delusion that Government has any source of income—apart from its citizens' own pocketbooks—with which to finance medical services.

For the assistance of women who wish to help in a practical fashion, but feel the need of more specific direction, the following "Road map" has been prepared at the National Campaign office. Its purpose is one

of coordination—to enable women to proceed along the same route, carrying the same banners and approaching the same objectives as their menfolk in the campaign. Here are the road signs:

The four major activities are: 1. an effective endorsement drive among women's organizations; 2. participation in the work of the Speakers Bureau of the Association; 3. a well-organized literature distribution system; and 4. newsworthy publicity to women's page editors.

It is important that these activities be carried out in accordance with the general campaign pattern adopted for the area, and in close liaison with each area's own Medical Society campaign leaders. It is important to note, too, that the four activities required of Auxiliary members are as closely integrated as an army-navy-air force maneuver.

The first tool required in a drive for organization endorsements on a public issue is a listing of all organizations—together with their regular meeting dates for the area involved—city, county or state.

The second tool is a listing of conventions scheduled in the area. The most complete data—both on organizations holding regular meetings and convention listings—can be secured from state and local Convention and Tourist Bureaus and Chambers of Commerce. Since convention programs usually are set a minimum of 60 days ahead of the convention date, our case must be submitted as far in advance as possible, for proper consideration. If the national or state affiliate of a local organization whose resolution is wanted has already acted,—the local job is half done.

Similarly, a grass roots resolution from a local organization is usually the opening door to getting a national body on record. Ordinary meetings are as important as conventions. Regularly scheduled organization meetings are not so spectacular as conventions, but resolutions from such groups are vitally necessary to the success of the campaign.

A "cold" approach means a cold response. It is imperative never to approach an organization "cold"—that is, unknown, or unsponsored. Except for the most expert, it is difficult, unfair to those so approached—and quite unnecessary.

An Auxiliary should set about, through its own members, locating personal contacts on the governing board of the group whose action is sought. It is best to find a spokesman for medicine who is either a member of the organization to be approached, or well and favorably known to it. If the organization has such officers, the Program Chairman, Legislative Chairman, Health Chairman, and Public Affairs Chairman should be contacted, as well as the President and other leaders. To such leaders, the case for American medicine should be presented both verbally, in a personal approach, and formally, with campaign literature.

Literature explaining the issue should be placed in the hands of such officers early. The Question and Answer Pamphlet (WPB-1), titled "The Voluntary Way is the American Way," answers the 40 questions most commonly asked. The smaller, easily assimilated folder (WPB-2), titled "Your Medical Program—Compulsory or Voluntary," briefs the same material. Both are most helpful for this purpose. In the majority of cases, permission can be secured to make this informational material available to all members of club or organization at a meeting preceding its vote on compulsory health insurance.

Resolutions—Original or "Canned"? Samples of resolutions which have been adopted by various types of organizations are on file in the office of the State Medical Association and can be provided on request from the National Campaign Headquarters. However, resolutions should originate locally, in accordance with the interests and purposes of the organizations acting.

Favorable action from a responsible organization can be obtained only by getting the unassailable facts to that organization. It takes good judgment, careful planning, organizing, literature distribution, and contact work—and often an excellent, brief talk before the voting membership.

Build your case on facts—not fancy. In this campaign the facts are with us; the truth is on our side. There is no need to stretch the facts—and there is both damage and disservice to medicine's cause when the over-enthusiastic do so. The important thing is to get the facts to the people who honestly want them, and the facts in this case are

truly desired by growing numbers of citizens in every community of the Nation.

The services of every Speakers Bureau, prepared to provide the real story behind the issue of compulsory versus voluntary medical systems, will be welcomed by nearly every public-minded group of citizens approached. Don't hesitate to ask for a hearing. Auxiliary Speakers Bureaus should be coordinated closely with the Speakers Bureau of their own Medical Societies.

It is highly important that qualified speakers who are unidentified with the medical profession be included in such Bureaus. The battle against political medicine and an ever-extending welfare state concerns every American—not doctors alone.

When you have selected several of the best women speakers you can find in your community, when you have been assured of their willingness to be called on—and when you are confident they know the story—let the various women's organizations in your area know you are ready to provide speakers for them. Virtually every organization is eager to hear the story and will welcome a competent, well-prepared speaker.

A word of warning to the wise: The greatest error any well-meaning representative of medicine's case can fall into is the attempt to secure an endorsement from any group without proper preparation. Similarly, asking for action and publicly failing to get it is not helpful to the cause. The pamphlet WB-14, titled "Compulsory Health Insurance—A Threat to Health—A Threat to Freedom," is an address for the aid of speakers. It is arranged to be cut to fit any time allotted, from 10 to 45 minutes, and still tell a comprehensive story for the time allowed. Supplies of this pamphlet are in the hands of the State Medical Association, and have been sent on to their member Societies.

How about debates? Debates are for experts only. They make a gratuitous forum for the opposition. The National Campaign policy is to let the opposition spokesmen seek their own forums.

Every speaker, fortified with facts, should endeavor to come away from a meeting with a formal resolution against compulsory health insurance and for preservation of

voluntary health insurance and high health standards.

Speakers Bureau Procedure: Prepare a schedule and assign to someone the responsibility of seeing that your speakers are on the spot, on time, to fill their engagements. Have a statement ready in advance, quoting your speaker's talk briefly, for release to the local papers in the issue immediately following her appearance. Provide her with a sufficient number of pamphlets for distribution to her audience after her talk.

When you get an endorsement, that is the newsworthy item which should be covered in the first paragraph of your story—and the spokesman for the endorsing organization should be quoted.

What to do with a resolution? Copies of a resolution, once adopted, should be sent by the enacting organization to the area's own Congressmen and Senators, and by the Auxiliary or Medical Society securing it to the National Education Campaign office of the A. M. A., One North La Salle Street, Chicago, Illinois.

A resolution, of course, is only as valuable as the uses to which it is put. Those uses are: a. local publicity (also state and national, if warranted) quoting the leaders of the organization taking action. Newsworthy spokesmen outside the medical profession, naturally, are of inestimable value to the cause of American medicine; b. use of the enacting organization's House Organ or other publication for publicity to its own members and the public; c. use of the organization's best speakers for appearances before other groups; d. distribution of campaign literature through the organization's facilities to its members.

Once an organization formally has expressed its opposition to compulsory health insurance, one or several of these activities come naturally enough, if carefully explained and made as easy as possible on the organization. It must be remembered, with gratitude and appreciation, that to most lay organizations such helpful activities are extracurricular.

Literature Distribution: Every possible channel should be used to disseminate information and campaign material. Local business and industrial concerns should be asked to enclose such material with their

regular mailings. Increasingly, firms are requesting pamphlets for this purpose. Duplication of effort will be avoided by close cooperation with Medical Societies.

Every doctor's wife should make it her responsibility to see that her husband's office is kept supplied with campaign literature for the use of patients and visitors in the office and for enclosure with statements and letters. She should see that the poster, "The Doctor," selected as the keynote of the doctors' campaign, is properly displayed as well.

Campaign literature (preferably WBP-1 or WBP-2) should be distributed, with the permission of the chairman or president of the organization involved, at the places of all members of groups holding regular luncheon meetings, at the earliest opportunity. This would include service clubs, civic and patriotic groups and women's organizations of all types.

Endorsing organizations generally are glad to mail informative literature to their memberships, and this should be suggested to them.

How can the busiest women help? The woman with little time to attend meetings, ring doorbells or give speeches still can help enormously among her own friends and associates. One who leads an active social life reported recently that she tucks pamphlets into all her personal correspondence—even invitations to dinner parties. "This matter involves the American Way of Life," she writes, "and dinner parties won't matter much if that way of life is destroyed."

Every woman who feels the issue is important will cover her personal mailing list with pamphlets explaining the issue as American medicine sees it. Even the busiest housewife can hand the printed material to her butcher or grocer, explaining that the matter is vitally important to her family and to his—to the Nation and to the community—and she hopes he'll find time to read about it.

Unless the general public has knowledge of the progress you are making, the effectiveness of the efforts of your Auxiliary may be dissipated. It is important, therefore, to set up a Women's Press Chairman, or Press Committee, so that every newspaper in your community may get the real facts

about compulsory health insurance and the news generated by women concerning it.

What is valid news? Every endorsement is valid news. When an important organization has taken favorable action, an authorized statement from its most influential member should be given to the press. Hard-hitting statements against socialized medicine by women leaders in your community always make news. Your Speakers Bureau will make news as its members appear before various meetings. The local women's editors and club editors will be glad to receive brief, well-written news stories.

All such editors should have factual data in their files on this issue—preferably WBP-1.

For Publicity or Press Chairmen who are often disappointed in the lack of acceptance of their material by the women's page editors, here are reprinted some helpful pointers once suggested to Women's Club Press Chairmen by the Club Editor of the San Francisco News:

1. Newspapers are published daily or weekly. To a daily, last week's news is as stale as last year's. Mail your copy at the earliest possible moment.

2. Stick to facts. Eliminate adjectives.

3. Don't editorialize. "The committee is working hard" is opinion, not news.

4. Begin your copy with the most interesting item rather than with time or place, but remember that every piece of copy must cover the five essentials—Why, What, When, Where and How.

5. In introducing married members through the public press, present them formally—Mrs. J. C. Smith, not Mary Smith.

6. Leave release date to the editor's judgment unless the material is advance copy of a speech or honestly important to withhold until a specific date.

7. Remember that your appeal must be to reader interest far greater than your own organization membership.

8. Type your copy, if possible, on full-size 8 x 10" paper, double-space and write on only one side of the paper.

9. Sign your own name, address, and telephone number. If copy must be handwritten, print all names.

10. Check copy back after writing, to make sure all names, dates, and facts are correct.

11. Pictures often are welcome, if they are clear and sharp. Write name and identification (left to right) on the back of each picture.

12. Read your newspaper, check the printed story against your copy, and profit thereby.

Finally from various states where it is recognized that the campaign's success rests largely on responsible, well-ordered activities of Auxiliary members have come the following suggested "Do's" and "Don'ts" in the women's campaign:

1. Do carry out the four Auxiliary activities in close coordination and within the framework of your own Medical Society's campaign. In general, stick to objectives and campaign procedures developed and approved for nationwide use by the American Medical Association's Campaign Coordinating Committee.

2. Don't launch any work that will add to the responsibility, expense or personal labor of menfolk who already are overburdened with projects important to the medical profession. The campaign plans already adopted nationwide are working in every area of the country, and the main cost is in time and personal energy.

3. Do spread your responsibility among real working groups and committees so that the work is distributed fairly for the most productive results.

4. Don't let your activities overlap or duplicate the efforts of your own Medical Society.

5. Do avoid unnecessary communications and committee calls on the Medical Society staff.

6. Do remember, however, that Auxiliary projects which are geared to take work off the Medical Society instead of putting it on will be welcomed with open arms by the menfolk!

Trained employees are more valuable to an organization than new employees, and periodic health surveys may prevent many physical disasters and prolong the working life and capacity of faithful workers.—*Edward I. Salisbury, M. D., F. A. C. S., New York State J. Med., September 15, 1950.*

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

PROTECTION AGAINST ATOMIC BOMBING

A new era in the history of mankind may be said to have begun on August 6, 1945. For on that day, after nearly six years of the Second World War, a U. S. plane took off from an American base with the first atomic bomb to be used in warfare. In a very short time, the speed of flight being what it is, that history-making plane was over Hiroshima, Japan. In a matter of seconds that deadly missile was released and began its swift descent upon the city. There was an explosion the like of which had never been seen by the people of that community or any other in the history of warfare. Hiroshima, with its some 324,000 people, was 60 per cent obliterated. An official report issued some-time later by the Supreme Allied Headquarters in Tokyo stated that this first atomic bombing had caused 306,545 casualties. (That total included the dead, the missing, the seriously and slightly injured, the sick, the homeless, etc. According to the report, there were 78,150 deaths, while the seriously injured numbered 9,428 and those less seriously injured totaled nearly 28,000). Later official reports said that the atom-bomb-wounded at Hiroshima averaged about 32,000 to the square mile.

That first release of atomic energy against an enemy brought the Japanese High Command face to face with the reality of defeat. Never before had the leaders of a great and proud nation been forced to fight against such overwhelming destruction. And while they and their advisers wavered between capitulation and a forlorn struggle against impossible odds, a second Japanese city felt the full force of this unprecedented new weapon. When Nagasaki was bombed five days later, a more powerful bomb was used. This time there were about 43,000 wounded per square mile—not a mere 32,000. With threats of a city-by-city bombing of other large centers of population if the war continued, the Japanese capitulated. The war,

which had begun with the invasion of China in 1937 and reached world proportions in 1949, ground to a stop.

The atomic bomb had given America and her allies an overwhelming military victory. There was dancing in the streets in Alabama and in every other state, as well as in many foreign countries. Even our late enemies were glad, after a fashion. For, with victory impossible for them, there was relief in the knowledge that there would be an end to the bombings.

But there were solemn faces among the rejoicers. For our leaders realized that problems vastly more complicated than winning a war had been unleashed by that victory-bringing atomic bomb. We had a world monopoly on it, we had good reason to think. But such a monopoly is a temporary thing at best. Never in the long history of warfare has one nation been able to keep a revolutionary new weapon for its own use except for a short time. The rifle, the breech-loading gun, the cannon, the machine gun, the battleship, the dreadnought, the superdreadnought, the tank, the hand grenade, the bomber, the magnetic mine—call the roll and you will find that every one has become the common property of the whole world in a very short time. What reason had we to expect, or hope, that other nations would not, in the next war, be able to give American cities the same kind of treatment that we had given Hiroshima and Nagasaki? The only difference—and that is not a pleasant thought—is that the atomic bombs of the future will make those dropped in World War II puny and toylike by comparison.

That problem is still very much with us. Tragically enough, it is even more serious than it was at the war's end. For then there was hope that united international action could and would be taken to outlaw the bomb. Our late allies appeared to favor such a plan as an alternative to a mad fight to destruction and chaos. But those bright hopes have dimmed. There is no longer any serious talk about the international con-

trol of atomic energy. There is slight reason to believe that this powerful force will be diverted to constructive uses solely. And, while atomic bombs grow rapidly in number on both sides of the Iron Curtain and even more rapidly in killing power, we skirt from crisis to crisis. The grim task of preparing to meet another enemy goes on relentlessly.

Unfortunately, our concern over the dire possibilities of atomic warfare is still largely confined to those in high positions. This mortal danger does not seem to have drifted down to the man and woman on the street. Mr. and Mrs. Alabama are either unable or unwilling to face up to this new peril and see what can be done about it. If war should come tomorrow—atomic war—most of us would be as defenseless against the terrible blasts, the lethal radiation and the other horrors of atomic bombing as were the people of Hiroshima and Nagasaki.

A pretty good idea of our mental state of unpreparedness was forcefully illustrated some time ago. A physician on the staff of the Atomic Energy Commission decided to make an informal survey. He talked to people he encountered from day to day in his work. Some of them were in civilian hospitals. Some were in military hospitals. Some were members of swanky clubs, eating and drinking in an atmosphere of elegance and luxury. And to every one he put this question: "What would you do in event of an atomic attack?" The answers were almost as similar as his question. Expressed in slightly differing phrases, they were essentially the same: "I'd get out of the area."

Perhaps that question-asking physician was a cynic. Or maybe he was just a realist. At any rate, he had a pretty poor opinion of the average person's conception of the proper thing to do at such a time. So he was not surprised at the fruits of his question-asking. But they impressed upon him how serious the danger of atomic-bombing ignorance really was. And that doctor's perturbation over the general tendency to do the wrong thing was not eased when he put his question to still others. For they too—civilian doctors, nurses, ambulance drivers, ward attendants, etc.—also were putting their faith in getting away to a place of safety.

Why is flight at such a time foolish and

dangerous? Let us get the opinion of someone who has studied this matter of protection against atomic explosions. He is the anonymous author of an article in the publication *Pegasus*. Titled "Learn and Live," the article says:

"A panic-stricken retreat from an A-bomb area is the worst thing an individual can do. In the first place, there is no more safety to be obtained in doing so. Second, if everyone does it, great personal danger will exist in the stampede. Third, and most important, it would be unqualified cowardice because it would mean leaving behind, exposed to the ravaging fires that spread after an atomic attack, the wounded neighbors and fellow citizens of the community. These people, plus millions of dollars of property, including your own, can be saved by proper attention to the responsibilities which atomic warfare imposes on us all—men, women and children.

"What are these responsibilities? First, to protect yourself. If an A-bomb is dropped from an airplane, as most officials think, you will probably have a warning of from hours to minutes. Be it minutes or even seconds, there are a number of things you can do before the blast occurs."

That anonymous author repeated something that had been emphasized many times before: At both Hiroshima and Nagasaki, the greatest danger was in the indirect effects of the blast—not the direct results. More specifically, more people appear to have been killed and injured from falling masonry, timbers and other parts of buildings than from the force of the explosion or from radiation. Actually, we are told, radiation, about which we hear so much, was responsible for only 15 per cent of the deaths from those two A-bombing attacks. Moreover, that writer points out, even this relatively small percentage can be materially reduced by proper caretaking. As compared with those 15 per cent who died from radiation, 30 per cent—twice as many—succumbed to burns.

Probably we Americans are more afraid of radiation than of anything else involved in atomic-bombing. Perhaps that is due in large part to the natural tendency to fear, especially anything with which we are unfamiliar. We have known, and known of,

blasts of various kinds for a long time. Farmers blast with dynamite in landclearing operations. Conventional high explosives used in war depend upon blasts for their destructive power against fortifications, factories, enemy troops, ships, etc. So it is something we can understand. It is at least well within the bounds of the world in which we live. But radiation has a foreign sound. It is full of dangerous potentialities in most minds. Actually, however, it is nothing new. Scientists have known and worked with it a long time. For radiation is a part of the x-ray. Our medical scientists and others deal with it constantly in treating cancer patients with radium. Various forms of radiologic applications have added to general health in a number of fields. There is a great deal of information about it. All of us need to avail ourselves of that knowledge.

But we can materially increase our chances of surviving an atomic bomb attack without any particular knowledge of the science of radiation. All we need to do is to prepare ourselves physically and mentally for the exigencies of such an experience and act wisely when and if it comes. Here are a few "do's" and "don'ts" to keep in mind:

1. As soon as you can—not after war begins, since it may start with a giant atomic bomb attack—prepare a "refuge area." That is just a strange-sounding term for a place of safety in case of an attack. If you have a basement in your home, then make it your family's "refuge area." No matter where it is, be sure it is provided with an exit that may be used safely at all times. That means it should enable occupants to get out of the "refuge area" without harm even if the building has collapsed. Stock the "refuge area" with a generous supply of the things you will need. You should place there one or more flashlights, with replacement batteries. There should be enough food to last for at least 24 hours. Water may be needed at least that long. Keep an axe or hatchet there for use in hacking your way out of or through a pile of debris. As for food, perhaps the most suitable is canned tomatoes.

2. As soon as you hear the first alert, go into action. Cut off all gas and electric con-

nections outside the house. Close all doors, windows, shutters, venetian blinds and chimney vents. If you have not already taken plenty of water to the "refuge area," do so, provided you have enough time. Herd all members of your family in the "refuge area." If all or most of them can huddle together near one or more supports, so much the better. If you have been foresighted enough to place a table or bed in the "refuge area," let as many as possible lie under it. Let the others lie against the walls. Having done these things, await the attack as calmly as possible. Encourage calmness among others. Avoid panic and hysteria at all times.

3. After an atomic attack, be careful about using water and food in the house. The water should be boiled before it is drunk or used in cooking until the authorities announce that the public water supply is safe again. Food that has been subjected to an atomic bomb attack is not dangerous, provided it has been covered. Turn on the electricity and gas after the "all clear" has been sounded and after they have been checked for possible damage. Keep the radio on. That will be the only way you can receive instructions and information from health and safety officials. Do not use the telephone, except in an emergency. The lines will need to be kept open for official calls.

4. If you are away from home and out in the open when a bomb explodes, fall flat on your stomach. Keep an arm directly in front of you to shield your head and eyes. Close your eyes. Pull a coat, a newspaper or some other object over your head. Keep the eyes covered for at least ten seconds after the blast. Discard your covering without touching it any more than necessary.

5. If you are away from home but in a city street when an atomic bomb attack comes, scurry into the nearest doorway. Stand in the archway.

6. If you are in automobile at such a time, stop as quickly as you can without causing an accident. Prepare to fight the blast of air that will come. Have all passengers in the back seat duck behind the seats.

7. If your house catches fire, prepare to move out of your "refuge area" as quickly and safely as possible. The same is true of

course if a crumbling building or something else makes it dangerous for you and others to stay there. In getting away, don't try to take too many things with you. Remember that you may have to carry them a long way. Authorities recommend just a single change of clothing. Dress for comfort.

Fortunately, much has been learned about atomic defense since the people of Hiroshima and Nagasaki, unwarned and unprepared, faced Atomic Attack No. 1. With our newly gained knowledge, we should face the future calmly and with a minimum of fear.

BUREAU OF LABORATORIES

Dewey M. Wells, Act. Director

SPECIMENS EXAMINED

SEPTEMBER 1950

Examinations for diphtheria bacilli and Vincent's	389
Agglutination tests (typhoid, Brill's and undulant fever)	1,111
Typhoid cultures (blood, feces and urine)	586
Examinations for malaria	484
Examinations for intestinal parasites	3,496
Serologic tests for syphilis (blood and spinal fluid)	28,165
Darkfield examinations	2
Examinations for gonococci	1,870
Examinations for tubercle bacilli	2,935
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	65
Water examinations	1,456
Milk and dairy products examinations	4,525
Miscellaneous	297
Total	45,405

Nursing needs have increased in spite of lower death rates, longer life expectancies, and a generally healthier population. The number of people in the United States has increased by an estimated 16,000,000 since the 1940 census. More people are now living to an older age than ever before, and consequently the diseases and disabilities of older people have multiplied. A high standard of living has prevailed since the early years of the war, medical prepayment plans have spread, and public health services have been expanded in many areas. In 1940, 10,087,000 patients were admitted to hospitals in the United States, but by 1948 the number of hospital admissions had risen to 16,422,000.—*Pub. Health Reports, August 5, 1949, Chesley Bush, M. D., Esta H. McNett, R. N., B. S., Lucile Petry, M. A., and Martha B. Naylor, R. N., B. S.*

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1950

	Aug.	Sept.	E. E.* Sept.
Typhoid and paratyphoid	6	11	11
Undulant fever	1	6	8
Meningitis	7	9	4
Scarlet fever	18	48	75
Whooping cough	80	106	45
Diphtheria	16	36	60
Tetanus	2	6	6
Tuberculosis	213	210	291
Tularemia	0	1	0
Amebic dysentery	4	8	2
Malaria	15	9	358
Influenza	21	46	35
Smallpox	0	0	0
Measles	17	7	22
Poliomyelitis	71	42	21
Encephalitis	0	1	1
Chickenpox	4	13	3
Typhus	15	25	43
Mumps	38	50	23
Cancer	406	418	256
Pellagra	0	0	3
Pneumonia	122	71	105
Syphilis	634	544	1265
Chancroid	5	16	15
Gonorrhea	380	395	611
Rabies—Human cases	0	0	0
Positive animal heads	18	18	0

As reported by physicians and including deaths not reported as cases.
*E. E.—The estimated expectancy represents the median incidence of the past nine years.

Rupture of the Urethra—The diagnosis of rupture of the membranous urethra is considered as soon as blood is seen at the external urinary meatus. Rectal examination frequently demonstrates an absence of the normal contours of the prostate. This is usually produced by bleeding around the urethra. The resulting hematoma masks the prostate. Not infrequently the prostate has been rotated anteriorly, because of complete separation from its attachment to the membranous urethra. Traction on the apex of the prostate by the remaining intact structures moves this portion of the gland anteriorly and proximally, away from the examiner's rectal finger.

It is occasionally necessary to inject radiopaque material into the urethra to confirm the diagnosis. If this is done, a 10 per cent solution of diodrast, skiodan or neoiopax should be used. These solutions produce no painful necrosis of tissue. Being readily absorbed, they do not remain as a foreign body. Sodium iodide, although opaque to x-ray, is extremely irritating to tissue and painful, when it has extravasated through the point of rupture in the urethra. The oily solutions are less desirable because of their permanence.

The possibility of rupture of the urinary bladder, complicating fracture of the bony pelvis, must also be considered.—*Semans, J. M. A. Georgia, Nov. '50.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR JULY 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During July 1950			July Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	6963	**	**	26.9	28.8	26.6
Total stillbirths	173	**	**	24.2	26.5	29.4
Deaths (stillbirths excluded)	1991	1175	816	7.7	8.5	8.3
Infant deaths:						
under one year	213	115	98	30.6	36.6	35.5
under one month	156	91	65	22.4	25.4	28.3
Cause of Death						
Tuberculosis, 001-019	62	29	33	23.9	33.6	35.9
Syphilis, 020-029	12	6	6	4.6	7.0	10.0
Typhoid and paratyphoid, 040, 041	1		1	0.4		0.4
Dysentery, 045-048	8	3	5	3.1	1.2	***
Diphtheria, 055	2	2		0.8	0.4	0.4
Whooping cough, 056	8	1	7	3.1	0.4	0.4
Meningococcal infections, 057	2	2		0.8	0.4	0.4
Poliomyelitis, 080, 081	5	5		1.9	1.2	1.5
Encephalitis, 082, 083	1	1		0.4		0.4
Measles, 085						0.4
Typhus fever, 100-108						0.4
Malaria, 110-117					0.4	1.2
Malignant neoplasms, 140-200, 202, 203†	217	153	64	83.7	89.2	84.6
Diabetes mellitus, 260	18	10	8	6.9	8.1	13.5
Pellagra, 281	1	1		0.4	1.2	1.5
Vascular lesions of central nervous system, 330-334	218	114	104	84.1	85.7	89.3
Other diseases of nervous system, 300-318, 340-398	27	12	15	10.4	15.8	10.0
Rheumatic fever, 400-402	6	3	3	2.3	1.2	0.8
Diseases of the heart, 410-443	605	383	222	233.8	245.2	205.2
Diseases of the arteries, 450-456	28	25	3	10.8	12.4	9.3
Other diseases of the circulatory system, 444-447, 460-468	31	17	14	12.0	12.0	2.7
Influenza, 480-483	6	4	2	2.3	2.3	3.5
Pneumonia, 490-493	54	25	29	20.8	21.6	23.6
Bronchitis, 500-502	1	1		0.4	1.2	2.3
Appendicitis, 550-553	6	5	1	2.3	2.7	3.5
Intestinal obstruction and hernia, 560, 561, 570	20	10	10	7.7	7.7	9.3
Gastro-enteritis and colitis (under 2), 571.0, 764	13	4	9	5.0	15.8	5.0
Cirrhosis of liver, 581	9	7	2	3.5	4.2	4.2
Diseases of pregnancy and childbirth, 640-689	15	6	9	21.0	24.7	28.2
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	5	1	4	7.0	5.2	4.2
Congenital malformations, 750-759	23	20	3	3.3	3.7	3.0
Accidental deaths, total, 800-962	158	114	44	60.2	59.5	68.4
Motor vehicle accidents, 810-835, 960	77	64	13	29.7	22.8	20.1
All other defined causes	341	179	162	132.0	167.6	183.2
Ill-defined and unknown causes, 780, 793, 795	93	33	60	35.9	35.5	46.8

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the July report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

Spinal Anesthesia for Vaginal Delivery—A word should be said with regard to the risks of spinal anesthesia in obstetrics. The state of pregnancy alters many physiologic processes so that the pregnant woman often responds in a way different from that of the nonpregnant woman to various procedures and medications. That the response of a pregnant patient to spinal anesthesia will be different should then be assumed; certainly it should not cause surprise. With the low injection of hyperbaric solution, with the small dose given, and with the elevation of the head of the table, the nonpregnant person would have hardly any anesthesia of the abdominal wall; yet the woman in labor has anesthesia as high as the ninth dorsal nerve root distribution. This may be due in part to the recurrent distention and emptying of the veins of the spinal canal that accompanies the uterine contractions. This expansion and contraction of the veins cause a decrease and increase in the space in the spinal canal. The effect is a wave-like up and down motion of the spinal fluid which carries the anesthetic higher. Other factors which are contributory are lower blood pressure, lower spinal fluid pressure, and obliteration of the lumbar curve.

Spinal anesthesia for any procedure carries with it the risk of chemical or bacterial meningitis. Fortunately, complications of this nature are extremely rare and the hazard has to be balanced against the risks of aspiration pneumonia and anoxemia associated with anesthesia by gas.

Before undertaking delivery with spinal anesthesia the physician must be familiar with and experienced in the use of spinal anesthesia and be aware of the peculiarities of response of the pregnant woman to the anesthetic.

He must be willing to spend more time with the patient in the final stages of labor than is usually spent at the present time, and he must be ready to use forceps more frequently than with the conventional methods of delivery. He must also be ready to resist the temptation to speed up the delivery and must be prepared to offer additional anesthesia if the spinal appears to be wearing off before delivery is completed.

The author does not believe in routine procedures of any sort but believes that this is a splendid method of delivery for normal deliveries when all conditions are satisfactory and may even be considered the anesthesia of choice for difficult conditions such as breech presentation, prematures, twins, occiput posterior, and version and extraction where maximum relaxation of pelvic structures and maximum oxygenation for the fetus are all of such great importance.

It is to be hoped that reckless and indiscriminate enthusiasm will not interfere with the use of this splendid type of obstetric anesthesia.—*Truman, GP, November 1950.*

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COMPARISON OF THE NEWER MERCURIAL DIURETICS

WM. J. ATKINSON, JR., M. D.

Mobile, Alabama

The value of mercurial diuretics has become firmly established in the treatment of cardiac decompensation, and in other conditions where there is sodium retention, such as in the nephrotic stage of glomerulonephritis and some stages of cirrhosis. However, the drugs used have had certain disadvantages, and continued research has been carried on in an attempt to decrease their toxicity and local irritation. It has long been recognized that an occasional sudden, severe, and sometimes fatal reaction may result from the intravenous administration of mercurial diuretics. Since 1942 evidence has been accumulating that the reactions may be due to direct toxic effects on the myocardium.¹⁻¹⁰ For this reason it has been concluded that routes other than intravenous are desirable wherever possible. The earlier mercurials were extremely irritating locally, but two of the newer drugs, Mercuhydrin and Thiomerin, are much better in this respect, and this report will be concerned chiefly with a comparison of these two drugs.

Experimentally, Lehman¹¹ has found that Thiomerin injected subcutaneously in rats causes less inflammatory response than other mercurials, and that the intravenous administration in the cat shows it to be at least

160 times less toxic to the myocardium than Mercuhydrin.¹² Mercuhydrin has been found experimentally to be much less toxic intravenously than other previous mercurial diuretics.

Clinically, several reports have appeared stating that local reactions were negligible after the subcutaneous administration of Thiomerin.¹³⁻²² Our experience in a fairly large series has not been quite so encouraging. The following results were obtained in studying 250 patients for periods of two to six months each. Two mercurials were compared at a time by giving them to the same patients on alternate weeks for from one to three months. If no reaction occurred after a test dose, 2 cc. were given each time.

LOCAL REACTIONS TO PARENTERAL INJECTIONS

The incidence of local reactions in our series was much higher with subcutaneous Thiomerin than with either Mercuhydrin or Thiomerin given by the intramuscular route. In 150 cases where a dosage as large as 2 cc. of Thiomerin was necessary subcutaneously, local reactions of sufficient magnitude to cause considerable discomfort were present in 33% of the cases (table 1). These reactions may be divided as follows: 5% had very severe local reactions, 9% had tender lumps or nodules for several weeks after administration, and 19% had a sore arm for several days to a week. Necrosis did not occur in any patient. Two-thirds of these reactions occurred with the patient's first dose of Thiomerin and the rest were scat-

Read before the Association in annual session, Birmingham, April 21, 1950.

Part of this study was conducted at the St. Louis City Hospital, and the findings in the earlier part of the series are being reported in the Journal of the Missouri State Medical Association.

TABLE 1
LOCAL REACTIONS

	Subcutaneous	Intramuscular In Deltoid		Intramuscular In Gluteus Maximus	
	Thiomerin (150 patients)	Thiomerin (150 patients)	Mercuhydrin (150 patients)	Thiomerin (140 patients)	Mercuhydrin (150 patients)
Considerable discomfort	33% 5% severe 9% tender nodules for several weeks 19% sore arm 3-7 days	12%	12%	4%	4%
Mild discomfort	10%	9%	6%	5%	5%

tered throughout the three months of treatment by the subcutaneous route. Only a little more than half of these had subsequent reactions to further subcutaneous Thiomerin. It was also noted that there were twice as many reactions to intramuscular Thiomerin among the group who had previously had local reactions to the subcutaneous route. At least a part of this variation in response was thought to be due to variation in lots of the drug since reactions were found to be more numerous in certain lots than others. (See addendum.) A certain number of the reactions, however, were apparently due to a true sensitivity to the drug—possibly to the sulfhydryl group. Local circulation also appeared to be a factor in the reactions and the majority of the patients who had local reactions were those with greater degrees of cardiac decompensation.

Very little difference, in the percent of local reactions, was noted between intramuscular Thiomerin and intramuscular Mercuhydrin. Considerable discomfort was experienced by 12% of the 150 patients receiving either Thiomerin or Mercuhydrin intramuscularly in the deltoid muscle, and mild discomfort was experienced by an additional 9% with Thiomerin and an additional 6% with Mercuhydrin (table 1). Intramuscular injections given in the gluteus maximus muscle caused considerable discomfort in only 4% of either the 140 patients treated with Thiomerin or the 150 patients treated with Mercuhydrin. Mild discomfort was experienced in an additional 5% with both drugs when given in the gluteus maximus.

We believe that Mercuhydrin is probably

still the mercurial of choice when the intramuscular route is to be used, especially since Thiomerin is not only more expensive but deteriorates after being put into the solution, and can only be kept in this condition for about two weeks in the refrigerator. (See addendum.)

GENERAL REACTIONS TO PARENTERAL INJECTIONS

The incidence of general reactions was slightly higher with parenteral Thiomerin than with Mercuhydrin. Muscular cramps in the legs and abdomen occurred in 3% with Thiomerin, 2% with Mercuhydrin, and 3% with Salyrgan-Theophylline (table 2). This was not due to a depletion of blood sodium but apparently to a direct action of

TABLE 2
GENERAL REACTIONS

	Thiomerin (250 patients)	Mercuhydrin (225 patients)	Salyrgan- Theophylline (132 patients)
Muscle cramps	3%	2%	3%
Nausea	3%	0.5%	0
Diarrhea	2% (bloody—1%)	0	0
Chills and fever	1%	0.5%	0

the mercurial on the muscle. The incidence of nausea was 3% with Thiomerin and 0.5% with Mercuhydrin. Diarrhea developed in 2% of the patients treated with Thiomerin and became bloody in 1%; chills and fever occurred in an additional 1% of the Thiomerin cases, and 0.5% of the Mercuhydrin cases.

COMPARATIVE EFFICACY OF PARENTERAL INJECTIONS

Although some patients repeatedly obtained a better diuresis and weight loss on one particular parenteral mercurial than

with the others, the average changes for the entire series showed about equal results for equal doses of Thiomerin, Mercuhydrin or Salyrgan-Theophylline. The total diuresis was also about the same regardless of what parenteral route was used. As might be expected the subcutaneous route gave a slower, milder, more prolonged diuresis in comparison to the rapid, marked diuresis produced by the intravenous route. Intramuscular routes gave results somewhere in between, with the gluteus maximus being more rapid than the deltoid for ambulatory patients.

ORAL ADMINISTRATION

The oral administration of mercurial diuretics in tablet form was, in general, less effective than the parenteral routes and, in doses sufficient to produce a nearly comparable diuresis, the incidence of enteritis and proctitis was fairly high. Mercuhydrin gave fewer such reactions and was more effective than Salyrgan-Theophylline.

Four tablets of Mercuhydrin per day produced a diuresis which in many cases was almost comparable to 2 cc. per week parenterally. However, diarrhea developed in 25% of the 20 patients treated with this dose.

Two tablets a day caused less diuresis, but were useful in decreasing the number of parenteral injections necessary, and, in milder cases, were adequate alone. A mild diarrhea was experienced by 10% of the 30 patients given this dosage.

One tablet a day had a mild diuretic effect and diarrhea was not noted in the 25 patients tested.

SUMMARY AND CONCLUSIONS

1. Parenteral mercurial diuretics are more effective than oral.
2. Subcutaneous and intramuscular routes are safer than intravenous, although severe reactions to intravenous mercurials are uncommon.
3. Local reactions are less frequent with intramuscular than with subcutaneous injections, if 2 cc. doses are to be used. (See addendum.) Local reactions are twice as frequent in the deltoid as in the gluteus maximus.
4. Mercuhydrin is at present the drug of choice for intramuscular injections because

it has a slightly lower incidence of general reactions than Thiomerin (see addendum), does not deteriorate when stored, comes in individual sizes, and is less expensive.

5. Subcutaneous Thiomerin has some advantages for patients who do not experience too much local discomfort. This is most often in patients where smaller doses, such as 1 cc., will suffice. In these, it is often less painful than intramuscular injections, it does not produce the occasional neuritic pain seen with intramuscular mercurials, and has the further advantage that it can be self-administered in selected cases, as is insulin.

6. Local reactions will still necessitate the use of the intravenous route in a few patients. Animal experiments would make it seem that Thiomerin is the safest by this route, but a subcutaneous test dose of 0.5 cc. should be given first.

7. Diuresis is about equal with Thiomerin, Mercuhydrin, or Salyrgan-Theophylline regardless of which parenteral route is used.

8. One or two oral Mercuhydrin tablets a day are of value for milder diuresis, or to prolong the interval between parenteral injections. They will cause a diarrhea in some cases, however.

ADDENDUM

While this paper was in course of preparation, a communication was received from Campbell Products Company, the manufacturers of Thiomerin. They state that there have been many technical difficulties in the uniform manufacture and stabilization of this product, and that previously there have been variations in different lots, as we had concluded. However, they claim that the product has been stabilized. Additional studies during 1950 have shown very few reactions to the subcutaneous, or intramuscular administration of Thiomerin manufactured after January 1, 1950. This newer product appears to be superior to Mercuhydrin in this respect.

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Trichomonas Vaginalis—It is only necessary to place a drop of the vaginal discharge on a slide mixed with a drop of normal saline solution to make the diagnosis.

The question is frequently asked: "Is this a venereal disease"? My answer is definitely not.

Unless one is willing to give hours upon hours in the diagnosis and treatment of this condition, then he should refer the patient to some one who will. The treatment cannot be carried out without a microscope. It is impossible always to find the parasite at the first examination and it will be necessary to make repeated examinations without the patient having had any vaginal treatment in the meantime. A simple douche with salt or vinegar will frequently prevent finding the parasites. It is absolutely necessary to know that they are present before the treatment is begun; else you will never know whether the patient actually had the infection and will not know when she is cured. I have discovered that practically all vaginal discharges will be cured with this treatment.

The length of time necessary to treat any patient will be determined by that individual. The longest time it has taken me to cure one was five years and she reported to the office one year later and had remained well. A specimen of the discharge must be placed under the microscope at every treatment to determine the progress and know when the patient is free. Long experience has proved that it will be necessary to give a treatment every day at first, then every other day, then twice a week, and later once a week until the patient has passed two menstrual periods free; and now we have them return after each period for the next two months to make sure that there has been no recurrence. A patient may remain free for the entire month and when the period returns the parasites show up again. Treating patients during the menstrual periods is rarely necessary and it is of little value because the drug is washed away with the menstrual flow. If they do not have a return in six months I consider them cured. Nothing under this can be considered, for occasionally a patient has remained free for three months and then had a relapse. When the disease recurs after six months I class it as a reinfection, and I have had a few to do this. I have noticed when a reinfection does occur, they are quickly cured and I rarely find a parasite after the first treatment, although the treatment must be carried out as formerly until the patient has passed two menstrual periods free. I have had only one with a second reinfection and she was quickly cured.—*Ferguson and Edgerton, Virginia M. Monthly. Dec. '50.*

EXPERIENCES IN GENERAL SURGERY AT A MODERN 350 BED GENERAL HOSPITAL IN ALABAMA

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This is a sectional review of the major operations performed on the General Surgical Service of the Lloyd Noland Hospital, of the Tennessee Coal, Iron and Railroad Company, Fairfield, Alabama, together with a report of the work done in the department. This general hospital with a closed staff has a capacity of 350 beds. The period of the report is from October 1, 1948 to October 1, 1949, and does not include surgical procedures performed in the allied fields of orthopedics, urology, gynecology, otolaryngology, ophthalmology, neurosurgery, and thoracic surgery.

During this annual period 1,064 patients were treated on the General Surgical Service in the hospital, and 13,043 visits were made by patients to the General Surgical Out-Clinic Service, not including the Emergency Clinic. The hospital patients included 381 white males, 312 colored males, 216 white females, and 155 colored females. The total number of major surgical procedures performed on these hospital patients during this year was 548. There were 7 hospital deaths among all the patients who underwent major surgical operations, giving an overall general operative mortality for the year of 1.28%. Similar records for the previous annual period showed 508 major surgical procedures with an overall general operative mortality of 2.55%. A more detailed classification and discussion of the operations, as well as the associated fatalities, follow.

APPENDECTOMIES

There were 162 operations performed with a preoperative diagnosis of appendicitis, as against 149 such operations last year. The appendix was removed in all cases except 2. In these 2 there was drainage only of an abscess resulting from acute appendicitis. This year in the whole appendectomy group there were 2 deaths, giving a total mortality of 1.2% as against 1.3% last year. These 2 deaths will be discussed later. The average age of all the appendix operation cases was 27.3 years. The total number of white patients having operations with acute appendicitis was 99 or 66.4% of the whole,

and their average age was 29.8 years. The number of colored patients of similar classification was 50 or 33.6% of the whole, and their average age was 24.7 years.

The appendectomy cases can now be summarized under the different pathological classifications. There were 95 appendectomies for acute, suppurative appendicitis, with no deaths. Their average age was 23.5 years. Forty-eight of these cases were white males and 21 were white females. One white male, aged 35, had acute inflammation associated with a mucocele of the appendix. Another white male infant, aged 5 months, showed acute traumatic appendiceal inflammation associated with an ileocolic intussusception. The corresponding colored group included 20 males and 6 females.

The number of appendectomy patients revealing gangrenous appendicitis without perforation totaled 23, with no deaths. The age average in this group was 28.7 years. Eleven of these cases were white males and 3 were white females. One of the white females, aged 17, with acute abdominal symptoms of 4 hours duration was 3 months pregnant. The colored patients in this group were 7 males and 2 females. During the past 3 years at this hospital a consecutive series of 302 patients have had appendectomy for acute suppurative or acute gangrenous appendicitis without a death.

The patients who underwent appendectomy for acute appendicitis with perforation numbered 29, with an average age of 32.5 years. There was 1 death in this group. Eleven of the patients were white males and 5 were white females. One white female, aged 33, was 4 to 5 months pregnant. The acute ruptured appendix was associated with multiple appendiceal diverticuli. The colored patients included 7 males and 6 females. The death in this group was a white male, aged 59 years, who died on the ninth postoperative day with massive pulmonary embolism. In spite of every effort to get this patient to move about and take exercise in bed during his early postoperative period

he refused to do so. He had entered the hospital 8 hours after acute onset of abdominal pain, for which he had taken a laxative. During the annual period of this report those patients in whom a definite clinical diagnosis of acute appendicitis with perforation was made on hospital admission were primarily treated expectantly, as a rule, with concentrated penicillin therapy alone, or combined with streptomycin, in addition to indicated supportive measures over a period of several days, or until evidence of acute inflammation had subsided. The patient was then discharged from the hospital and requested to return for an interval appendectomy in 6 to 12 weeks. As a result of this plan, 14 of this group of patients who had appendectomy for perforated acute appendicitis underwent their appendectomy anywhere from 3 weeks to 6 months after the acute inflammatory episode, and without any serious complications. One 56 year old colored male who had his interval appendectomy 6 weeks following subsidence of his acute infection with perforation of the appendix was found to have localized pseudomyxoma peritonei at the time of the delayed appendectomy. Other patients, and these in our experience are definitely a minority of the cases in this series group of appendicitis patients, undergo progressive abscess formation. These individuals require early drainage of the abscess before the acute inflammation will resolve.

Two patients during the year had surgical drainage of intra-abdominal abscess due to appendicitis. One of the patients, a colored male, aged 16, had drainage of an appendiceal abscess 9 days after the acute onset of abdominal symptoms, and 6 days after hospital admission. He recovered. Another colored male, aged 9, died after such an operation. This patient entered the hospital 6 days after the acute onset of his abdominal symptoms. He received his operation 20 days after hospital admission and following a large amount of antibiotic therapy. Because of persistent pyrexia and evidence of a mass which continued to be present in the pelvis, it was decided to drain the abscess. At operation a small pelvic abscess surrounded by very dense adhesions was found and drained. The patient died 3 days after operation. Autopsy performed soon after death showed multiple abdominal abscesses,

a perforated appendix and bilateral basal atelectasis in the lungs.

During the past 3 years, a consecutive series of 77 patients have been operated upon for acute appendicitis with perforation. This includes 6 cases in which an appendiceal abscess only was drained. In this group have occurred all of our deaths in patients with appendicitis receiving operation, which totaled 5 for the 3-year period. Two of the deaths in these cases with perforated appendicitis were due to pulmonary embolism, 2 were due to general peritonitis, and the fifth was associated with multiple abdominal abscesses and bilateral basal pulmonary atelectasis. All of the deaths were males, 4 of whom were colored males and 1 a white male. The total mortality rate for the 3-year period for this group of serious cases receiving operation for acute appendicitis with perforation was 6.5%. The mortality for the past 12 months was 6.4%. The overall general mortality for the 379 consecutive cases operated upon for acute appendiceal inflammations over the past 3 years was 1.3%. This same figure is also the overall general fatality rate for the cases operated upon for acute appendiceal inflammations during the past 12 months.

There were 13 appendectomies in patients this year who were operated upon for possible acute appendicitis, but in whom the appendix showed no microscopic evidence of acute inflammation. Fibrosis of the appendix was reported in 3 of these patients. Acute mesenteric lymphadenitis was the postoperative diagnosis in 3 others. Three additional cases were diagnosed as acute gastroenteritis. One patient was found to have chemical peritonitis from reflex menstrual blood through the right oviduct. One appendix showed a lumen distended with fecal material. The last 2 appendectomies in this group were found to be entirely normal and the cases were classified under undiagnosed disease.

REPAIR OF HERNIAE

The surgical group numerically next to the appendectomies was repair of herniae, which operations totaled 128 among the various classifications of herniae, as compared to a total of 124 operations for the same group last year. There were no deaths. This gives a consecutive series of 352 operations for repair of different types of herniae

encountered in the last 3 years without a fatality.

There were 112 operations for repair of inguinal herniae. Thirty-six of the operations were in white males whose age average was 30.4 years. Twenty-one were for right sided herniae and 15 were on the left side. These included 33 indirect herniae and 3 direct inguinal herniae. One was a left-sided, sliding, indirect inguinal hernia. There were 5 operations for inguinal herniae in white females whose age average was 38.7 years. All these herniae were indirect and in one woman, aged 49, the inguinal herniae were bilateral. There were 69 operations for inguinal herniae in colored males whose average age was 35.4 years. Forty-four were right inguinal herniae and 25 were on the left side. Five colored males had bilateral inguinal herniae. Three of the herniae were direct and the remainder were indirect. There were 3 right sided, recurrent, inguinal herniae repaired, 2 of which were direct herniae. The 2 repairs for recurrent direct inguinal herniae were in colored males who also had an indirect hernia repaired on the left side during the same hospital admission. Each left sided hernia was primary. Another of the colored males had repair of a left, indirect, sliding hernia. A strangulated Richter's type indirect inguinal hernia was found in a colored man, aged 38, who required a local resection of the bowel because of the strangulation. Only 2 colored females had repair of inguinal herniae. Their average age was 32, and both were indirect herniae, 1 being on the right side and the other on the left.

There were 9 operations for repair of umbilical herniae. These operations were in 1 white male, aged 4, 4 white females whose average age was 40 years, 2 colored males, both aged 2 years, and 2 colored females, aged 34 years, and 2 years, respectively.

Another group of 4 individuals received repairs of old postoperative incisional herniae. Two were from right McBurney incisions and 1 each from lower midline and lower right rectus incisions. One of the McBurney incision hernia repairs was in a white male, aged 52, and the other repair operations in this group were in white females whose average age was 37.6 years.

Two colored males, aged 46 years and 54 years, respectively, underwent repair of epigastric herniae.

One white male aged 46, was found at laparotomy to have a large herniation through the mesentery of the distal ileum on the right side of the abdomen.

BREAST OPERATIONS

This year, 42 operations were performed on breasts, as compared to 54 last year. These operations were without a fatality. Total number of breast operations for the past 3 years is 141, all without a mortality. During the past 12 months there were 8 operations for malignant conditions of the breast, all in females. Five of the operations were on white females and the remaining 3 were on colored females. There were 5 complete mastectomies, together with resection of the adjoining axillary glands for primary carcinoma of the breast. Four of these cases showed no microscopic axillary gland involvement. Three had the primary growth in the left breast, and in the other 2 it was in the right breast. Three of these patients were white women whose average age was 44 years, and the other 2 were colored women with an age average of 48.5 years. In addition to the above, there was a white female, aged 70, who had a complete mastectomy for mucinous carcinoma grade II or III, but who had no palpable axillary glands, and no resection of the axilla was undertaken.

One white female, aged 65, and 1 colored female, aged 66, had excision of recurrent breast carcinoma from the axilla and skin of the chest wall. The white woman had received her primary operation for carcinoma of the left breast, grade III, with axillary involvement in January 1947. The other case had a complete mastectomy and axillary dissection for scirrhus carcinoma in 1945.

There were 24 operations for excision of benign lesions of the breast. Nineteen of these were in white females whose average age was 36.5 years, and 5 were in colored females whose average age was 32.8 years.

Another group of 5 operations were for drainage of breast abscesses.

Five patients had simple mastectomy. Two of these patients received bilateral simple mastectomy. In this group were 3

white males whose average age was 31.6 years. One of these white males had a bilateral simple mastectomy for gynecomastia, and this was the diagnosis in the other 2 white males. One white female, aged 39, had a bilateral simple mastectomy for bilateral fibrous dysplasia with cyst formation. One colored male, aged 18, also underwent a simple mastectomy of the left breast for gynecomastia.

THYROID OPERATIONS

There were 32 operations for thyroid conditions within this annual period, compared to 24 such operations last year. There were no deaths in this group. For the past 3 years at this hospital, there have been a total of 75 consecutive operations on the thyroid gland in patients without a fatality. During this year 15 of the thyroid operations were on white patients and 17 were on colored patients. There were 8 operations for diffuse toxic goiter, 7 of whom had bilateral subtotal lobectomies, and the eighth case had a right subtotal lobectomy for recurrent diffuse toxic goiter. Twenty-four patients had operations for adenomatous goiters and 4 of these adenomatous thyroids were toxic. There were 5 bilateral subtotal lobectomies in this adenomatous group. One of these last cases, a colored male, aged 57, received a pathological diagnosis of embryonal adenoma at the time of the thyroid operation. This pathological diagnosis was a few months later believed to be erroneous as the result of finding metastatic thyroid carcinoma involving the thoracic bony cage and lung.

Three of the toxic diffuse goiters were in white males with an average age of 46. Two colored males also received operations for toxic diffuse goiters, and their average age was 32.5 years. One white female, aged 32 years, and 2 colored females with an age average of 48.5 years, also had bilateral subtotal lobectomies for diffuse toxic goiters. Three of the 4 toxic adenomatous goiter operations were in white females whose average age was 46.6 years. The fourth toxic adenomatous case was a colored female aged 35 years. Only 2 white males had operations for adenomatous goiter and their average age was 43 years. Six white women with an average age of 31.8 years and 11 colored women whose age average was

38.6 years had operations for non-toxic adenomatous goiters.

BILIARY TRACT OPERATIONS

Twenty-five patients received operations for conditions affecting the biliary tract as compared to 18 such operations last year. There were no deaths in this group; and this gives a 3-year total of 57 consecutive operations on the biliary tract in patients without a fatality. Three of the operations this year were in colored patients, 2 of whom were colored males. Only 1 white male had surgical intervention within this group.

There were 16 cholecystectomies, all of whom had cholelithiasis. All but 1 of these cases were white females with an age average of 44.4 years. Three of these patients had a microscopic diagnosis of acute cholecystitis, 1 of whom, a white female, aged 72, had an acute perforated gallbladder with localized abscess. This latter case received a subtotal cholecystectomy. The 1 colored female was aged 50 years.

Four additional cases had cholecystostomy alone for acute cholecystitis with stones. One of these was a white male, aged 40, and the other 3 were white females having an average age of 61 years. One of these acute gallbladders in a woman, aged 49 years, was gangrenous.

Three more of the patients in this series received exploration of the common duct, as well as cholecystectomy. All 3 had stones in both the gallbladder and the common duct. A T-tube drainage of the common duct was carried out in each case. Two of the patients were white females, aged 51 years and 55 years, respectively, and the third patient was a colored male, aged 49 years.

The final 2 cases of the biliary tract group received cholecystojejunostomy for obstructive jaundice due to carcinoma in the head of the pancreas. One of these was a white female, aged 72 years, and the other was a colored male, aged 55 years.

SPLENECTOMIES

During this year 3 splenectomies were performed without a fatality. One of the operations was for primary thrombocytopenic purpura in a white male, aged 62, who made a rapid and complete recovery from his disease. A second splenectomy was in a

colored male, aged 46 years, who was suffering from Banti's type splenomegaly. His spleen weighed 700 grams. The third splenectomy was in a white male, aged 36 years, who suffered an automobile accident with severe chest contusions and multiple comminuted rib fractures in the left chest and shock. He had a hemothorax and gave evidence of acute splenic hemorrhage with shock 3 days after his hospitalization. This patient fully recovered after a very stormy convalescence, which included bilateral partial atelectasis, lower lobar pneumonia and thrombophlebitis in the right leg. His spleen showed multiple infarcts with lacerations.

OPERATIONS ON THE STOMACH AND DUODENUM

Thirty operations were performed for lesions of the stomach and the duodenum with 1 death. There were 25 such operations last year, also with 1 death. This year there were 14 patients with acute perforated peptic ulcers and all of these perforations were located in the duodenum. All of the patients were males with an average age of 39.9 years. Nine were white males and the remainder were colored males. The oldest patient was a white male, aged 76 years, and the youngest was also a white male, aged 21 years.

Two patients underwent posterior gastroenterostomy operations and another patient had an anterior gastroenterostomy for benign obstructing lesions due to peptic ulcer.

Two additional patients had local excision of peptic ulcers only.

Six patients received a subtotal gastrectomy operation. Three of these operations were for chronic duodenal ulcer, 1 for prepyloric ulcer, and 2 for adenocarcinoma of the stomach. One of these carcinoma cases was in a white male, aged 79 years, who made an uneventful recovery from the operation. The other gastric carcinoma case was really a direct extension from a primary carcinoma in the transverse colon. He was a 68 year old colored male who also had had a gastrocolic fistula as a result of his malignant neoplasm. His surgical procedure was a subtotal gastrectomy, resection of the transverse colon, and splenectomy. He recovered from his operation and was still living several months later. The 1 death among the cases operated upon for lesions

in the stomach and duodenum was in this subtotal gastrectomy group. He was a white male, aged 39, who suffered from a chronic duodenal ulcer before operation. He died on his thirteenth postoperative day after he had developed a postoperative hemorrhage, gastric fistula, evisceration and uremia. His operative wound was reopened on the tenth postoperative day in an effort to close the gastric fistula, but to no avail. This is the first postoperative death which has occurred in a consecutive series of 17 patients on whom a subtotal gastrectomy operation was performed.

There were 2 laparotomies for exploration of the stomach. One of these cases was a colored male, aged 45 years, who was found to have an inoperable carcinoma involving the whole stomach. A gland was taken for biopsy, and this showed metastatic mucinous carcinoma. The second case was a white male, aged 32 years, suffering from a marginal gastrojejunal ulcer secondary to an old posterior gastrojejunostomy. He had numerous dense adhesions throughout his upper abdomen. An attempt was made to perform resection of the vagus nerves at the lower end of the esophagus, but both could not be identified. One nerve was believed to have been resected. The esophagus was accidentally opened and immediately closed. The patient recovered from the operation, but after a short period of freedom from his ulcer symptoms these recurred. He has recently undergone complete vagus resection at the level of the lower one-third of the esophagus through a transthoracic approach, with apparent full amelioration of his pain. His vagus nerves were found to be of a type which divides into multiple small filaments at the lower aspect of the esophagus.

Closure of an old Stamm-type gastrostomy was performed in a colored male child, aged 20 months. The gastrostomy had previously been performed as an emergency in this child because of esophageal stricture resulting from drinking a lye solution. Dilatation of the esophageal stricture had now allowed the patient to partake of food by mouth.

Two Fredet-Ramstedt operations for congenital hypertrophic pyloric stenosis were successfully performed in a white male infant, aged 4 weeks, and in a white female infant, aged 7 weeks.

OPERATIONS FOR ACUTE INTESTINAL OBSTRUCTION

Eight patients received laparotomies for acute intestinal obstruction due to benign lesions, with 1 death. The death occurred in a white female infant, 5 days old, who was explored 2 days previously, at which time several ileotomies were done in an effort to clear the bowel of very tenacious inspissated meconium, causing the bowel obstruction which was secondary to congenital cystic fibrosis of the pancreas. Postmortem examination revealed generalized peritonitis, perforation of a gangrenous ileum, atelectasis, acute pleurisy of both lower lobes, and congenital fibrocystic disease of the pancreas.

Five other acute, small intestinal obstructions were found to be due to adhesive bands, some of which had an associated volvulus of the small bowel. One of these patients, a white female, aged 29 years, had a volvulus involving a segment of the ileum with 18 inches of gangrenous bowel. Two feet of ileum were resected and an end-to-end anastomosis performed. She had an uneventful recovery.

A colored male, aged 76 years, with acute intestinal obstruction, was found to have a large gallstone obstructing the descending colon. A colotomy, with removal of the gallstone, was followed by a complete recovery in this patient.

The last case in this acute intestinal obstruction group, was a white male infant, aged 5 months, who suffered an acute ileocolic intussusception. Laparotomy and reduction of the intussusception, together with appendectomy, cured this infant.

OPERATIONS ON THE LARGE BOWEL

Eleven patients were operated upon for lesions of the large bowel as compared to 6 such operations last year. The average age of the 11 patients this year was 55.7 years, and there were no postoperative hospital deaths in this group. Five of the patients were white males with an age average of 56 years; 3 were white females whose average age was 52 years; 2 were colored males, aged 60 years and 68 years, respectively; and the last case was a colored female, aged 49 years.

There were 4 cases of inoperable carcinoma of the sigmoid or rectosigmoid colon. One of these patients had previously re-

ceived 2 different resections of the sigmoid colon for 2 different primary carcinomas which developed in this part of the large bowel. The last operation was about three and one-half years after the first operation and revealed general abdominal metastases. A transverse colostomy was done. Two others of these 4 patients received transverse, double-barrel colostomies and the fourth had a double-barrel left inguinal colostomy.

Another different case was a white male, aged 71 years, who received a palliative ileo-transverse colostomy for an inoperable carcinoma of the ascending colon.

A white male, aged 57 years, underwent a sigmoid colotomy for resection of a large benign polyp located in the rectosigmoid just below the peritoneal reflexion.

A white male, aged 72 years, received a two-stage resection of a carcinoma of the splenic flexure of the colon with acute intestinal obstruction. A cecostomy was performed in the first-stage operation.

Another interesting case was a colored male, aged 68, who was found to have a carcinoma of the transverse colon with involvement of the stomach wall so that a gastrocolic fistula had formed. A resection of the transverse colon, a subtotal gastrectomy and a splenectomy were performed as a one-stage procedure in this case. This patient was also mentioned above in the discussion of subtotal gastrectomies.

A white male, aged 42 years, received an abdomino-perineal resection of the rectosigmoid for severe pain and stricture of the rectum which had formerly been associated with a megacolon. He had undergone a left inguinal colostomy several years previously.

A left inguinal, double-barrel colostomy was performed on a colored woman, aged 49 years, because of an obstructing metastatic pelvic mass from advanced carcinoma of the cervix.

The last case in this large bowel group was a white female, aged 57 years, who had drainage of an abscess from perforation of an acute diverticulitis of the sigmoid colon.

STAB AND GUNSHOT WOUNDS OF THE ABDOMEN

Seven cases of gunshot or stab wounds of the abdomen were operated upon during the past year, with 1 death. The average age of these patients was 31 years and they were

all Negro males except 2: a white male, aged 31 years, and a colored female, aged 26 years. The patient who died was a colored male, aged 19, who presented a penetrating wound from a 22 rifle bullet in the epigastrium. X-ray studies showed the bullet shadow in the right iliac fossa. Laparotomy revealed perforation of the stomach, left lobe of the liver, gallbladder, and transverse colon, as well as a large retroperitoneal hematoma. This patient died 48 hours post-operatively with a temperature peak of 107° F. before death. No autopsy examination was allowed.

A colored male, aged 19 years, presented a transverse lower abdominal penetration of a 22 rifle bullet, which entered the body at the level of the right anterior lateral thigh with fracture of the wing of the right ilium. He had a marked hemoperitoneum associated with perforations of the left iliac vein, ileum, and sigmoid colon. The perforations were all closed and the patient recovered.

Another colored male, aged 31 years, had a left upper quadrant stab wound with perforated and protruding loops of ileum on the abdominal wall. The loops of bowel were reduced and the perforations sutured, with recovery of the patient.

The colored female, aged 26 years, had been shot through the mid-epigastrium with a 32 caliber pistol. Laparotomy, with suture of multiple perforations of the transverse colon and jejunum, together with a necessary partial resection of the jejunum and end-to-end anastomosis, was followed by a complete recovery.

The white male, aged 31, also received a perforating pistol bullet wound entering through the epigastrium with perforations in the stomach and mesocolon, associated with hemoperitoneum, as well as evidence of left kidney injury. The perforations were closed and the patient recovered after a very stormy convalescence.

A colored male, aged 51, was stabbed through the lower left chest and presented a gapping wound in the chest wall, with omentum protruding. Through a left sub-costal laparotomy incision the omentum was reduced and the opening in the left diaphragm sutured. Complete recovery followed.

The last patient, a colored male, aged 39

years, had received definitive surgery at another hospital after a stab wound through the epigastrium. He was transferred to this hospital within 24 hours following his exploratory laparotomy. He suffered a complete wound disruption of his left rectus incision on the postoperative seventh day, which required a secondary closure with through and through wire sutures. He recovered.

EXPLORATORY LAPAROTOMIES

Eight operations were classified as exploratory laparotomies, with 1 death. The death occurred in a very obese 52 year old colored female with diabetes mellitus, who entered the hospital with a history of abdominal pain of 6 days duration; and she showed evidence of ileus together with marked bulging through a diastasis of the recti muscles. She appeared very toxic. Exploratory laparotomy through an upper midline incision revealed severe generalized peritonitis, etiology unknown. The patient was in poor shape during the operation and died on the table as the abdominal incision was being closed. Autopsy examination was refused. Two cases with gunshot wounds had exploratory laparotomy. One case was a pistol bullet wound of the right posterior chest and the second was a similar type wound of the pubic area. Although a retroperitoneal hematoma was found in each case, there was no evidence that the bullet had entered the peritoneal cavity in either case. Both patients recovered. Another case entered the hospital for multiple stab wounds in the left flank and hip. On exploration of this patient's abdomen, about 500 cc. of free blood was found in the abdominal cavity, but otherwise the abdomen was negative to examination. This patient also recovered. The above 3 cases were in Negro males whose average age was 18.7 years.

A 10 year old white boy accidentally fell in a sitting position onto the bare pedal bar of his bicycle, with deep penetration of the steel bar into his perineum. He received an exploratory laparotomy after hospital admission. This operation revealed pelvic peritonitis with exudate about the base of the urinary bladder. The exudate was aspirated and the bladder opened and explored, and urinary extravasation was believed to be coming from either the posterior urethra or the neck of the bladder. A suprapubic

cystostomy with a mushroom catheter, together with drainage of the space of Retzius, was performed. The boy recovered. Another 4 year old white boy was kicked in the left flank by a mule. Exploration of his abdomen revealed no injury to the spleen, but there was a retroperitoneal hematoma due to trauma of his left kidney. This patient also recovered. A 16 year old colored male presented signs of lower abdominal peritoneal irritation and at an exploratory operation there was found to be adhesions about the cecum and distal ileum, together with enlarged mesenteric glands. He also recovered from his operation. The last patient of this group was a 58 year old white male who received an exploratory laparotomy because of x-ray evidence of a diverticulum of the stomach with epigastric discomfort over several months. No diverticulum was found and the abdominal exploration was otherwise negative. He developed postoperative bronchopneumonia with partial wound disruption but recovered from his operation.

MISCELLANEOUS GROUP

Eleven more major surgical procedures were performed with 1 fatality, and these operations were classified under a miscellaneous group. They will be recorded serially with a brief description of each procedure.

1. Exploration and plastic repair of a painful McBurney incision scar without finding a hernia or neuroma.

2. Exploration and drainage of an abscess thought to be in the left lower abdomen but which proved to be retroperitoneal and secondary to tuberculosis of the spine. This patient received a spinal fusion operation 3 months later.

3. A fibrosarcoma of the right thigh was widely excised.

4. Drainage of an extensive perirectal abscess which had extended up into the left flank. The drainage was performed through a left gridiron incision.

5. Excision of a fibrosarcoma near the left side of the anal orifice was followed by a skin graft to this area.

6. Excision of a mycotic aneurysm of the left temporal region.

7. Excision of massive hygroma of the left

side of the neck. Also there was an excision biopsy of a cystic area in the left pelvic bone. The bone biopsy was reported as hemangiomatosis of the bone.

8. Excision of a residual portion of the above neck hygroma 3 months after the first operation.

9. Exploration of a stab wound of the left arm, with hemorrhage from the brachial artery. The brachial artery and vein were both ligated.

10. Exploration of the left popliteal space in a 43 year old colored male who had received a shotgun wound of the left thigh in 1937, and now suffered a progressive swelling at and just above the popliteal space. Multiple arteriovenous aneurysms were found. Excision and ligation of the popliteal artery were performed. An amputation of this leg was advisable but the patient refused such an amputation.

11. The last patient is one that was really a urological case. She was a colored female, aged 50 years, who presented a large tumor mass in the left abdomen and left flank. She was explored through a left flank kidney incision and an inoperable malignant tumor mass was found. After operation she rapidly went downhill and died 1 month postoperatively. The postmortem examination revealed a hypernephroma of the left kidney with metastases to the renal veins, lymph nodes, liver, lungs and bone marrow. There was also a hydronephrosis and pyelonephritis due to left ureteral obstruction.

MAJOR AMPUTATIONS

Major amputations of extremities are usually performed by the Orthopedic Service but 3 such operations were carried out by the General Surgical Service this year without a fatality. The 3 amputations were in white males, whose average age was 62.3 years. A modified Callander amputation just above the knee of the right leg was performed on a 62 year old white male who had extensive diabetic gangrene of the right foot. Another similar type amputation of the left leg was done on a white male, aged 63 years, who suffered an arteriosclerotic gangrene of the left foot. The third amputation case was a 62 year old white male who first entered the hospital for drainage of an extensive bilateral perirectal abscess. During his convalescence from this drain-

age operation, he developed an acute thrombosis of the right brachial artery with resulting gangrene of the right forearm and hand. An amputation of the right arm just above the elbow was performed. His convalescence was further complicated by a cerebral thrombosis, a spontaneous pneumothorax on one side, and an ulcer of the buttock. He finally recovered.

In addition to the above procedures, there were 6 operations for excision of pilonidal cysts. One pedicle graft and 28 split thickness skin graft operations were performed during the year. We do our hemorrhoidectomy operations as major surgical procedures, and there were 28 such operations this year. Also there were 17 cases with high ligation of saphenous veins, together with multiple serial excision of varicosities in the extremities of these patients.

OUTLINE OF OPERATIONS

	Number	Deaths
1. Appendectomies	162	2
2. Repair of hernia (all types)	128	0
3. Operations on the breast	42	0
4. Thyroid operations	32	0
5. Operations on gallbladder and biliary tract	25	0
6. Splenectomies	3	0
7. Operations on stomach and duodenum	30	1
8. Operations for acute mechanical intestinal obstruction (benign)	8	1
9. Operations for lesions of the large bowel	11	0
10. Operations for stab or gunshot wounds of abdomen	7	1
11. Exploratory laparotomy	8	1
12. Miscellaneous group	11	1
13. Major amputations	3	0
14. Excision of pilonidal cysts	6	0
15. Pedicle or split thickness skin grafts	29	0
16. Hemorrhoidectomies	28	0
17. Ligation of saphenous vein, together with multiple excision of varicose veins	17	0
	550	7
(Subtract 2 for correction)	2	
	548	
Overall general mortality	1.28%	

SUMMARY

During the 12 months from October 1, 1948 to October 1, 1949, the General Surgical Service at the Lloyd Noland Hospital treated 1,064 patients in the hospital and 13,043 visits were made by patients to the Out-Clinic Section of the General Surgical Service. The hospital patients included 381

white males, 312 colored males, 261 white females and 155 colored females. The total number of major surgical procedures performed on these hospital patients during the year was 548. Among these 548 operative cases there were 7 hospital deaths, giving an overall general operative mortality for the year of only 1.28%. These deaths included 1 white female, 2 white males, 3 colored females and 1 colored male. The white female death occurred in a 5 days old infant operated upon for acute intestinal obstruction due to tenacious meconium secondary to congenital cystic fibrosis of the pancreas. One of the white males died with massive pulmonary embolism several days after appendectomy for acute appendicitis with perforation. The second white male died following subtotal gastrectomy performed for chronic duodenal ulcer. He developed a gastric hemorrhage and an external gastric fistula together with wound disruption and uremia, which resulted in death. One of the colored females died at the end of an exploratory operation which revealed a very severe general peritonitis. Another colored female succumbed to her disease one month following exploration of an advanced inoperable malignant tumor of the kidney with widespread metastases. The 1 colored male, a boy aged 9 years, died following exploration and drainage of an abscess resulting from acute appendicitis with perforation.

The above fortunate overall general operative mortality rate of 1.28% can be attributed to the practice of principles for surgical work performed at the Lloyd Noland Hospital laid down by our beloved former chief, Doctor Lloyd Noland. These principles embody: (1) diagnostic work-up and careful preparation of elective surgical patients before operation, by the Medical Service, (2) anesthesia chosen and given by trained physician anesthesiologists who have charge of the patient, just before, during, and just after the operation, (3) good surgery performed by a competent general surgeon, (4) conscientious postoperative care, including Out-Clinic follow-up of the patient until he is ready to resume his work, or normal activities. Above all is a closely knit teamwork by the whole active and consulting staff which can be quickly brought to bear on any medical or surgical problem pre-

sented by a patient. This concerted effort also proves invaluable in emergency cases requiring surgical care. It is deemed a prime requisite that shock be overcome by appropriate treatment before submitting any emergency patient to the surgeon's knife. Our blood bank has proved of immense help in this respect.

At the Lloyd Noland Hospital there is

realized an overall effort to have the many adjuncts of modern medicine and surgery at the physician's command in his endeavor to properly care for surgical cases. This is in conjunction with a well organized and alert hospital staff, united as a team for the welfare of each patient. For this we offer a prayer of deep appreciation to the late Doctor Lloyd Noland.

CLINICAL SYMPOSIUM ON PRESENT DAY USE OF ANTIBACTERIAL AND CHEMOTHERAPEUTIC AGENTS

PART II—THE DRUG OF CHOICE

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It has been pointed out in the first section of this paper that there is usually a therapeutic agent of choice used in the treatment of most infections. Sometimes two antibiotics may emerge as the drugs of choice. In this section, we propose to present to the clinician the present day consensus, obtained by clinical experiment, as to just which antibiotic is the drug of choice in the various infections. In a few instances where sufficient clinical experience is lacking, the *in vitro* results will be cited. The second choice of drug therapy will also be stated, while, in other conditions, drugs which should be used in combination will be mentioned.

Actinomycosis: Penicillin and sulfadiazine should be used in combination, and these should be administered over a long period of time.

The recommended dosage is 600,000 units of procaine penicillin daily, with 200,000 units of crystalline penicillin every 8 hours for a period of 4-6 weeks. Sulfadiazine should be given orally, gram 1 every 6 hours for 2 to 3 weeks. A repeat course of treatment may be necessary. This treatment does not replace surgery where incision and drainage are indicated.

Aerosol Therapy: The diseases in this group, amenable to aerosol therapy, include

pharyngitis, rhinitis, acute purulent sinusitis, laryngitis, acute or chronic purulent bronchitis, streptococcal, staphylococcal, or Friedlander's infection of the lung, unresolved pulmonary processes (pneumonitis, atelectasis, infarct), lung abscess or gangrene, bronchiectasis, and infectious asthma.

The treatment recommended consists of 3 to 6 daily inhalations of the following antibiotic mixture, using one of the various apparatus recommended for hospital or home use. Fifty thousand to 100,000 units of crystalline penicillin G and 100 to 200 milligrams of streptomycin, dissolved in 1½ cc. of water or physiologic saline, is usually administered.^{1,2} In infectious asthma or cases where bronchospastic symptoms are associated with the pulmonary infection, it is recommended that this amount of penicillin and streptomycin be dissolved in 1 cc. of injectable benadryl, plus 0.5 cc. of epinephrine 1:1000 solution. In patients with marked bronchial secretion, postural drainage should precede each treatment.

In those patients where parenchymal involvement of the lung is associated with the infection of the respiratory tract as evi-

1. Beakay, J. F.; Gaensler, E. A., and Segal, M.: A Comparative Study of Various Apparatus and Techniques for Aerosol Administration, Connecticut M. J. 13: 855, 1949.

2. Davis, D.: Inhalation of Penicillin and Streptomycin in Office Practice, Arch. Otolaryng. 50: 156, 1949.

denced by fever and systemic reactions, oral administration of aureomycin should accompany the aerosol therapy. Again, penicillin may be given instead of aureomycin, possibly in combination with streptomycin to prevent the overgrowth of gram-negative organisms.

In patients with severe acute respiratory infections without pneumonia, and in which no etiologic agent was identified, rapid improvement has been reported with the use of aureomycin alone.³

Amebiasis: This age old scourge of mankind will apparently yield to the antibiotics. Hughes recently reported 38 patients treated with aureomycin.⁴ These patients had all failed to respond to previously accepted treatment procedures. Of this group of patients, 71 per cent were cured with 28 capsules each (250 mg.), given over a period of 4 to 7 days.

Oral administration of bacitracin in doses of 80,000 units daily for 10 days has brought apparent cures in 66 per cent of cases. The toxicity of this drug from oral administration is negligible.⁵

Anthrax: Penicillin is the drug of choice but it is advisable to combine it with sulfadiazine. Gold recently reported 2 cases of anthrax cured by aureomycin.⁶

Infection Caused by *Bacteroides Funduliformis*: The drug of choice has been penicillin up until recently. McVay and associates reported two cases of septicemia due to these organisms cured with aureomycin therapy.⁷

Brucellosis: In acute brucellosis, aureomycin appears to be the drug of choice, although chloromycetin may be equally effective. Not enough clinical experience is

available as yet with the latter drug. The second choice is treatment with streptomycin, together with sulfadiazine. Apparently aureomycin, combined with streptomycin, may emerge as the optimal therapy. Herrell and Barber recommend 3 grams of aureomycin with 2 grams of dihydrostreptomycin for a period of 12 to 14 days.⁸

In chronic brucellosis, recent reports state that aureomycin and chloromycetin are equally effective.^{9, 10}

Cholera: Sulfadiazine, sulfasuxadine, or sulfathalidine is equally effective.

Infections Due to *Coli Aerogenes* Group (Friedlander's bacillus, *E. coli* and *A. aerogenes*): Recently, in vitro sensitivity of these organisms to seven antibiotics was examined.¹¹ It was found that polymyxin and aerosporin were the most effective, followed by aureomycin and chloromycetin, which were equally effective, while streptomycin was much less effective. A comparison of in vivo and in vitro sensitivity gave similar results.¹²

Because polymyxin and aerosporin are not recommended or available for routine clinical use, treatment with aureomycin or chloromycetin is the antibiotic therapy of choice.

Diphtheria: Antitoxin is the specific therapy in this disease, but penicillin is recommended for the control of secondary infections. The administration of this antibiotic increases the chances for a favorable outcome in this disease process.

The treatment of carriers has been satisfactorily carried out with penicillin given intramuscularly and as nose drops (1000

3. Finland, M.; Wells, E. B.; Collins, H. S., and Gocke, T. M.: Aureomycin in the Treatment of Influenza and Certain Other Acute Respiratory Infections With or Without Pneumonia, *Am. J. Med.* 8: 21, 1950.

4. Hughes, J. D.: Treatment of Amebiasis With Aureomycin. Report of 38 Cases, *J. A. M. A.* 142: 1052, 1950.

5. Most, H.; Miller, J. W.; Grossman, E. B., and Conan, N., Jr.: Treatment of Amebiasis With Bacitracin, *J. A. M. A.* 143: 792, 1950.

6. Gold, H.: Aureomycin in the Treatment of Anthrax, *Am. J. Med.* 8: 31, 1950.

7. McVay, L. V., Jr.; Guthrie, F., and Sprunt, D. H.: Septicemia Due to *Bacteroides*. Aureomycin Hydrochloride Therapy in Two Cases Due to *Bacteroides Funduliformis*, *J. A. M. A.* 140: 1150, 1949.

8. Herrell, W. E., and Barber, T. E.: The Combined Use of Aureomycin and Dihydrostreptomycin in the Treatment of Brucellosis, *Proc. Staff. Meet., Mayo Clin.* 24: 138, 1949.

9. Ralston, R. J., and Payne, E. H.: Treatment of Chronic Brucellosis With Chloramphenicol and Aureomycin, *J. A. M. A.* 142: 161, 1950.

10. Harris, H. J.: Aureomycin and Chloramphenicol in Brucellosis, *J. A. M. A.* 142: 161, 1950.

11. Frank, P. F.; Wilcox, C., and Finland, M.: In Vitro Sensitivity of Coliform Bacilli to Seven Antibiotics (Penicillin, Streptomycin, Bacitracin, Polymyxin, Aerosporin, Aureomycin and Chloromycetin), *J. Lab. & Clin. Med.* 35: 205, 1950.

12. Bliss, E. A., and Todd, H. P.: A Comparison of Eight Antibiotic Agents In Vivo and In Vitro, *J. Bact.* 58: 61, 1949.

units per cc. in physiologic saline) every 2 hours during the day.¹³

Erysipeloid (animal erysipelas): The drug of choice in the treatment of this infectious process is penicillin.

Infections of the Eye: Braley and Sanders have reported the successful use of aureomycin borate, 0.5 per cent solution, as eyedrops in the following ophthalmic infections: staphylococcal, pneumococcal, Morax-Axenfeld diplobacillus, H. influenza, gram-positive cocci, gram-negative bacilli, herpes simplex, trachoma, epidemic keratoconjunctivitis and dendritic keratitis.¹⁴

Similarly, good results were reported with the local use of bacitracin in experimental and clinical ocular infections.¹⁵

Gas Gangrene (Clostridia Infections): The drug of choice is penicillin combined with sulfadiazine. This should always be accompanied by the necessary surgery and antitoxin administration.

Gonococcal Infections: The most effective drug is still penicillin. Three hundred thousand units of procaine penicillin cured 98 per cent of cases of acute uncomplicated gonorrhea. If the organism is penicillin resistant, aureomycin may give effective results.

In a more recent report, aureomycin gave equally as good results as penicillin. The dosage used was 1 gram three times daily for one day.¹⁶

Granuloma Inguinale: In treating this disease, the drug of choice is aureomycin. The length of the treatment is usually 10 days or until beginning healing is definite.¹⁷ A repeat course of treatment should be instituted if healing is delayed or relapse seems imminent.

13. Karelitz, S., and Spinelli, V. A.: Penicillin Treatment of Diphtheria Carriers, *Pediatrics* 3: 639, 1949.

14. Braley, A. E., and Sanders, M.: Aureomycin in Ocular Infections. A Study of its Spectrum, *Am. J. Ophth.* 32: 119, 1949.

15. Miller, J.; Slatkin, M. H., and Johnson, B. A.: Local Use of Bacitracin, *J. Invest. Dermat.* 10: 179, 1948.

16. Chen, C. H.; Dienst, R. B., and Greenblatt, R. B.: Aureomycin in the Treatment of Gonorrhea, *J. A. M. A.* 143: 724, 1950.

17. Hill, L. M.; Wright, L. T.; Prigot, A., and Logan, M. A.: Aureomycin in Granuloma Inguinale, *J. A. M. A.* 141: 1047, 1949.

The second choice of antibiotic in the treatment of this disease is streptomycin which, probably, is equally effective but its administration is more complicated. It must be administered parenterally. In advanced cases, the combination of the two drugs may be advisable.

Hemophilus Ducrey: The hemophilus ducrey organism responsible for chancroid infections responds to both streptomycin and sulfadiazine.^{18, 19} Aureomycin has been recently tried with encouraging results.

H. Influenzae Infection: In systemic infection, including meningitis, streptomycin combined with sulfadiazine is the therapy recommended. Specific antisera should be used as an adjunct to this therapy. In an evaluation of various methods of treatment used in 110 cases, it was concluded that the best results of therapy were obtained in cases where streptomycin was used. This drug was administered both intramuscularly and intrathecally. In conjunction with the streptomycin, sulfadiazine, serum and penicillin were used.²⁰

Aureomycin and chloromycetin may be as valuable as the above regimen inasmuch as excellent therapeutic results have been reported.^{21, 21a}

Leprosy: Good results have been obtained by using Promin (2 to 5 grams daily intravenously) or Diazone (1 to 2 grams, daily given orally). Occasionally hemolytic anemia develops during the course of administration of these sulfones. This complication is probably reversible inasmuch as it disappears on cessation of treatment.

Meningococcal Meningitis: Sulfadiazine

18. Wetherbee, D. G.; Henke, M. A.; Anderson, R. I.; Pulaski, E. J., and Kuhns, D. M.: In Vitro Antibiotic Effects on Hemophilus Ducreyi, *Am. J. Syph., Gonor. & Ven. Dis.* 33: 462, 1949.

19. Taggart, S. R.; Hirsh, H. L.; Hendricks, F. D.; Gable, G. R.; Puzak, M. A., and Greaves: The Treatment of Chancroid with Streptomycin, *Am. J. Syph., Gonor. & Ven. Dis.* 33: 180, 1949.

20. Crook, W. G.; Clanton, B. R., and Hodes, H. L.: Hemophilus Influenzae Meningitis; Observations on the Treatment of 110 Cases, *Pediatrics* 4: 643, 1949.

21. Drake, M. E.; Bradley, J. E.; Imburg, J.; McCrumb, F. R., Jr., and Woodward, T. E.: Aureomycin in the Treatment of Influenzal Meningitis, *J. A. M. A.* 142: 463, 1950.

21a. Prather, G. W., and Smith, U. H. D.: Chloramphenicol in the Treatment of Hemophilus Influenzae Meningitis, *J. A. M. A.* 143: 1405, 1950.

still remains the most effective therapeutic agent. In sulfa resistant or fulminating cases, addition of large amounts of penicillin may be of value.

Mixed Infections of the Gastrointestinal Tract: In infections of the mouth, aureomycin is apparently replacing penicillin as the most effective therapeutic agent.

a. In Vincent's organism infections, penicillin locally and parenterally has been very effective.

b. In aphthous stomatitis, use of a mouthwash of freshly prepared 0.5 per cent aqueous solution of aureomycin, four times daily, has brought prompt remission of symptoms.

c. In mixed infections due to other pathogens, aureomycin is recommended systemically and as a mouthwash.

In ulcerative colitis, good results have been reported with the use of aureomycin. This drug is useful, especially in controlling the secondary infection.²²

In nonspecific peritonitis, excellent results have been reported with the use of oral and intravenous aureomycin.²²

Antibiotics have been used extensively in the preoperative preparation for intestinal surgery. In a comparison of aureomycin, sulfasuxidine, sulfathalidine, and streptomycin, aureomycin was found the most effective substance for the suppression of bacterial growth in the intestinal tract.²³ *Proteus* and *Pseudomonas* were not affected, and, in a few instances, *E. coli* was only reduced but not entirely eliminated. Aureomycin was administered in these cases in a dosage of 750 milligrams every 6 hours.

Pertussis: In this disease, polymyxin is the most effective but because of its toxicity is not recommended. The drug is not available for clinical use. Aureomycin or chloromycetin favorably modifies the course of the illness.^{22, 23}

Pseudomonas Aeruginosa (Pyocyaneus): Frank and associates investigated the in vitro sensitivity of *Pseudomonas aeruginosa* to seven antibiotics and found aerosporin and polymyxin the most effective. Strepto-

mycin was less effective.²⁴ A case of meningitis due to *pyocyaneus* with recovery has been reported that was treated with aureomycin administered orally and intravenously.²⁵ The combination of streptomycin and aureomycin as has been suggested by Alexander and his group is most probably the best method of treatment.²²

Plague: For the bubonic and septic form, sulfadiazine alone, or with streptomycin, is the recognized therapy. Treatment of the pneumonic form has been unsatisfactory as a rule.

Infections with Pleuropneumoniae Group: Cases of non-specific urethritis caused by this organism have been reported cured with aureomycin.²²

Pneumococcal Infections: For pneumococcal pneumonia, penicillin is still the most effective therapeutic agent.

It has been recently reported, however, that results obtained with aureomycin therapy are comparable to those with penicillin.²⁶ In 174 patients, each treated with 500 milligrams of aureomycin every 6 hours, only 4 deaths occurred in the entire group. The fatality rate was lower and the temperature fell more rapidly than in 686 patients treated with penicillin.

In pneumococcal meningitis, penicillin combined with sulfadiazine is the most effective treatment. Aureomycin should be added to this regimen if no satisfactory result is obtained.

Urinary Tract Infections: There are two major causes of therapeutic failures in treatment of urinary tract infections: resistant organisms and anatomic abnormalities of the urinary tract. Therefore, before therapy is instituted, one should first attempt to identify the causative organism and study the urinary tract for possible anatomic

24. Frank, P. F.; Wilcox, C., and Finland, M.: In Vitro Sensitivity of *Bacillus Proteus* and *Pseudomonas Aeruginosa* to Seven Antibiotics (Penicillin, Streptomycin, Bacitracin, Polymyxin, Aerosporin, Aureomycin and Chloromycetin), *J. Lab. & Clin. Med.* 35: 205, 1950.

25. Neter, E.; Krauss, R. F.; Eagen, G. J., and Mason, T. H.: Aureomycin Treatment of Meningitis Due to *Bacillus Pyocyaneus* and *Bacillus Aerogenes*, *J. A. M. A.* 142: 1335, 1950.

26. Dowling, H. F.; Lepper, M. H.; Hussey, H. H.; Caldwell, E. R., Jr., and Spies, H. W.: The Treatment of Pneumococcal Pneumonia With Aureomycin, *J. Lab. & Clin. Med.* 35: 215, 1950.

22. References quoted by: Aureomycin: A Review of the Clinical Literature. Lederle Laboratories, 1950.

23. Payne, E. H.; Levy, M.; Zamora, G. M.; Vilarroel, M. S., and Canelas, E. Z.: Pertussis Treated with Chloramphenicol, *J. A. M. A.* 141: 1298.

cause of infection (stricture, calculus, and prostatic hypertrophy). If treatment is still of no avail, determination of sensitivity of organism to various chemotherapeutic agents may offer a solution.

Causative organisms, with the most effective antibiotic agents, are listed below:

Staphylococcus infection—aureomycin and/or penicillin
Streptococcus infection—aureomycin and/or penicillin
Gonococcus infection—penicillin or aureomycin
E. coli infection—aureomycin or chloromycetin
A. aerogenes infection—aureomycin or chloromycetin
Streptococcus fecalis infection—aureomycin
Proteus vulgaris infection—chloromycetin
Pseudomonas aeruginosa infection—streptomycin

In cases where the causative organisms cannot be identified, an antibiotic with wide antibacterial spectrum should be used. A combination of drugs, such as aureomycin plus penicillin, or streptomycin plus sulfadiazine, is usually effective.

The urine should be alkalinized when sulfadiazine or streptomycin is used and acidified if aureomycin is used. It is best to continue treatment for 5 to 7 days after the urine shows no further evidence of infections. If possible, an attempt should be made to restrict urinary output to 2,000 cc. during treatment.

Rickettsias: Both aureomycin or chloromycetin are equally effective in Rocky Mountain spotted fever, epidemic typhus, murine typhus, scrub typhus (tsutsugamushi fever), African tickbite fever, "Q" fever, and rickettsial-pox. The drug should be continued for at least 72 hours after the temperature returns to normal. In most infections, a course of treatment over 5 to 7 days is usually sufficient.

B. Proteus Infections: Frank and his associates investigated the in vitro sensitivity of *Bacillus proteus* to seven antibiotics and found that this organism showed the maximum sensitivity to chloromycetin, and to streptomycin and penicillin to a lesser extent.²⁴ These findings were corroborated by Bliss and Todd, who compared eight antibiotic agents, in vivo and in vitro.¹² Therefore, chloromycetin is the most effective antibiotic, with streptomycin less so. The combination of the two agents would seem advisable.

Shigella Infections: The drug of choice in the treatment of these infections is sulfadiazine. Streptomycin may be added if little or no response is obtained.

Spirochetal Infections (Other Than Syphilis): Aureomycin is now the drug of choice in the treatment of rat bite fever, Weil's disease, and relapsing fever. Penicillin is equally effective but the technical difficulties involved in its administration make it less desirable.^{27, 28}

Staphylococcal Infections: The drug most effective in these infections is penicillin. Large doses should be used. A sensitivity test is indicated when a serious infection intervenes.

Aureomycin is to be used in cases where good results are not promptly obtained or in infections due to penicillin resistant organisms. In fulminating infections, aureomycin should be used to supplement the penicillin. Good results from aureomycin alone have been reported in various staphylococcal infections.²²

In staphylococcus pneumonia, in which pleural fluid develops, instillation of penicillin into the pleural cavity may be helpful.

For dermal and subcutaneous infections, bacitracin or tyrothricin should be applied topically. Systemic administration of penicillin should supplement local therapy. It should be remembered that these antibiotics do not supplement surgical drainage when indicated in osteomyelitic abscesses, or infection of the hands.

If E. coli infection is suspected in mixed infection wounds, such as in abdominal wounds, the dose of penicillin should be increased inasmuch as E. coli will destroy the effectiveness of penicillin.

Streptococcal Infections: In streptococcal infections, penicillin in massive doses is most effective. If the immediate result is not good, aureomycin or sulfadiazine may be added. *Streptococcus fecalis* (enterococcus) is more sensitive to aureomycin than to penicillin.¹²

27. Heilman, F. R.: Aureomycin in the Treatment of Experimental Relapsing Fever and Leptospirosis Icterohemorrhagica, Proc. Staff. Meet., Mayo Clin. 23: 569, 1948.

28. Batchelor, T. M., and Todd, G. M.: Aureomycin and Penicillin Therapy in Leptospirosis (Weil's Disease), J. A. M. A. 143: 21, 1950.

The occurrence of streptococcal endocarditis always calls for special studies. An organism sensitivity test is helpful. An attempt should be made to raise the penicillin blood level to at least 5 times as high as the *in vitro* sensitivity. The daily penicillin dose used is usually from 2 million to 20 million units, or more. Procaine penicillin may be combined with crystalline penicillin. Benemid or Caronamide is efficacious in increasing the penicillin level. (See general instructions under Penicillin.) Penicillin should be administered by continuous intramuscular or intravenous method or by two hourly injections for a period of approximately 6 weeks. If no prompt result is obtained, aureomycin or streptomycin may be added to the therapy.

Localized infections due to streptococcus respond to bacitracin or tyrothricin. Systemic treatment with penicillin is used as an adjunct to this therapy.

In streptococcal meningitis, sulfadiazine, together with penicillin, is the therapy of choice. Aureomycin may be added to this therapy regimen if no satisfactory result is obtained.

Syphilis: Antisyphilitic treatment should always be withheld until the diagnosis of syphilis is definitely established. The drug now used most often and most effectively in this disease is penicillin. In this drug there is added to the armamentarium of the syphilotherapists a drug of practically negligible toxicity which is becoming more and more convenient to administer. Crystalline penicillin G, or procaine penicillin G for aqueous suspension, or in oil, plus 2 per cent aluminum monostearate, may be used. The amount of the drug and the duration of treatment vary with the stage of the infection.

In early syphilis, including primary, secondary, and early and late latent syphilis, two types of schedules of treatment are described. Either of these methods is equally effective.²⁹

(a) A total of 3,000,000 units of crystalline penicillin G may be administered in 60 individual intramuscular injections of 50,000 units at 3-hour intervals, day and night, over a period of 7½ days.

(b) An alternate schedule that is gaining wide popularity is that in which a total of 6,000,000 units of crystalline penicillin G, for aqueous suspension or in oil with 2 per cent aluminum monostearate are administered in 10 intramuscular injections of 600,000 units each, once daily for 10 days.

It is possible that the time dosage relationship will change with more recent clinical trials. Some authors are reporting good results with injections of 600,000 units of the procaine penicillin, two or three times weekly, until a total of 5,000,000 or 6,000,000 units is reached. Until such time as adequate clinical trials are carried out, it is wise to use a more conservative regimen in an infection that is so prone to relapse as is this disease.

Prevention and Treatment of Prenatal Syphilis: Penicillin has been found to be effective in the prevention and treatment of congenital syphilis.³⁰ It is of greatest value in this field when given to the mother, either prior to conception or in the early months of her pregnancy. It is effective though in the cure of the fetus *in utero*. The drug is very effective in curing the newborn syphilitic infant, provided he is not already in a hopeless state of debilitation. It becomes decreasingly valuable in producing complete cure of congenital syphilis during late infancy and childhood, but remains at least on par with heavy metal therapy.

The dose schedule used for treatment of newborns varies between 40,000 to 100,000 units per kilogram of body weight. The lesser dose usually suffices.

Either of the mentioned schedules used in early syphilis will be sufficient treatment for a pregnant mother in the prevention of syphilitic offspring. The earlier in the course of the disease treatment is instituted, the better the chance of a normal fetus. In any event patients should be treated at any stage in their pregnancy.

The question of continuing treatment during pregnancy or retreating these patients during subsequent pregnancies is possibly one of the outstanding problems in syphilotherapy today. There are several clear-cut answers to be found in the literature.

Treatment should be withheld in the pa-

29. Thomas, E. W.: Penicillin Treatment of Early Syphilis, *Am. J. Med.* 5: 687, 1948.

30. Ingraham, N. R.: Prevention and Treatment of Prenatal Syphilis, *Am. J. Med.* 5: 693, 1948.

tient who has been adequately treated for early syphilis and is sero-negative or responding normally. If she has relapsed clinically or serologically, or if the blood serologic reagin titer remains high, she is a candidate for retreatment.

In no case is it necessary for a prolongation of the treatment schedule with heavy metals, once adequate penicillin therapy has been administered. If there is reasonable doubt that the expectant mother's infection may be active it is the better policy to retreat these patients.

Neurosyphilis: In syphilitic meningitis, using crystalline penicillin G, a total of approximately 6 million units, given every 3 to 6 hours for 10-14 days is usually sufficient.³¹ Most cases of asymptomatic meningitis, meningovascular and tabetic forms of neurosyphilis respond much the same as the other forms mentioned. General paresis is more resistant to penicillin treatment.

The authors feel that if penicillin alone is used the dosage should be 9 to 12 million units or more, administered over a period of at least 2 weeks. If response is not good, or if the patient relapses, retreatment with larger doses of penicillin, supplemented with fever therapy, may be indicated.

Substitution of the procaine penicillin in daily doses of 600,000 to 900,000 units for more frequently administered crystalline penicillin is entirely acceptable in the treatment of neurosyphilis.

Late or visceral syphilis usually responds to one of the schedules described in the section under treatment of early syphilis.

Avoidance of Herxheimer Reaction and Therapeutic Paradox: It is generally agreed that no danger is to be anticipated from the Herxheimer reaction in primary and secondary syphilis; consequently, penicillin in therapeutic dosage may be initiated at once under these circumstances. There is a difference of opinion as to the injurious effects of the Herxheimer reactions in late syphilis, although presumed instances of untoward reaction have been observed in cases of hepatic syphilis, cardiovascular syphilis, and certain forms of neurosyphilis. Usually

there is no urgency for inception of penicillin treatment in late syphilis. The following procedure, therefore, is recommended as a precautionary measure in all stages of syphilis except early syphilis: that the penicillin course be preceded by 4 injections, at 5 to 7 day intervals, of 1.5 cc. of bismuth subsalicylate in oil.

Trichomonas Vaginalis: Good results have been reported with suppositories of aureomycin.²²

Chemotherapy of Tuberculosis: Clinical experiments and experiences have produced vast amounts of literature in this field. The following principles represent the present concepts as summarized in most references today.^{32, 33, 34, 35, 36} The most recent report of the Council on Pharmacy and Chemistry of the American Medical Association on the current status of the chemotherapy of tuberculosis in man has been used principally in the preparation of this manuscript.³⁷

From the reviews of treatment schedules and regimens, there is one definite principle that has emerged: that is, streptomycin therapy does not replace the conventional methods of treatment of tuberculosis. It has to be combined with bedrest, collapse therapy and other surgical procedures. Only in selected cases is chemotherapy indicated. The indications for drug therapy are as follows: miliary tuberculosis; meningitis; recent, acute, fairly extensive and progressive pulmonary tuberculous lesions, such as tu-

32. Streptomycin in the Treatment of Tuberculosis, Current Status, Report of the Council on Pharmacy and Chemistry, J. A. M. A. 138: 584, 1948.

33. Friskel, A. K.: Streptomycin in Tuberculous Infections, Bull. St. Mary's Group of Hospitals of St. Louis Univ. 1: 49, 1949.

34. Minutes of the First Through Seventh Veterans Administration Conferences on Streptomycin in Tuberculosis, Washington, U. S. Veterans Administration, 1946-1949.

35. Sweany, H. C.; Turner, G. C.; Lichtenstein, M., and Eustin, S.: A Preliminary Report on the Use of Para-Aminosalicylic Acid in the Treatment of Pulmonary Tuberculosis, Dis. of Chest 16: 633, 1949.

36. Para-Aminosalicylic Acid in the Treatment of Pulmonary Tuberculosis, Editorial, J. A. M. A. 141: 605, 1949.

37. Current Status of the Chemotherapy of Tuberculosis in Man, Report of the Council on Pharmacy and Chemistry, J. A. M. A. 142: 650, 1950.

31. Solomon, H. C.: Current Status of Penicillin Therapy in Neurosyphilis, Am. J. Med. 5: 712, 1948.

berculous pneumonia; acute bronchogenic spread; chronic disseminated; finely nodular tuberculosis without large confluent areas of destructive disease; tuberculosis of the larynx, trachea, bronchus; intestinal tuberculosis, with or without peritonitis; bone and articular tuberculosis; tuberculous fistula; scrophuloderma; genito-urinary tuberculosis; tuberculosis of the pericardium, skin and eyes; and in preparation for thoracic surgery and genito-urinary surgery.

The recommended dosage for streptomycin or dihydrostreptomycin in tuberculous infection is as follows:

In pulmonary tuberculosis: One gram of the drug should be administered daily in 1 or 2 injections for 120 days. Any change in this dose time relationship reduces the efficacy of the treatment.

In miliary tuberculosis and/or meningitis: Two grams should be administered daily for 120 days or longer. In meningitis, 50 milligrams of streptomycin (not dihydrostreptomycin) may be given intrathecally every 2-3 days, diluted to 10 cc. with normal saline after removal of a slightly greater amount of spinal fluid. This solution should be slowly injected intrathecally over a period of 10 minutes. This intrathecal therapy is usually given for a period of 3 to 4 months.

In extrapulmonary tuberculosis: A dose of 0.5 to 1.0 gram daily for 42 days is recommended. This reduction of dosage and duration of treatment has not adversely affected the results in this type of infection. For prophylactic therapy prior to genito-urinary and thoracic surgery, a dose of 1 gram daily for 7 days before operation and continued for 14 days following the operation is usually effective in preventing spread of the infection. It is usually not recommended prior to thoracoplasty but only in excisional thoracic surgery.

The toxic manifestations to these drugs can be diminished by reduction of dosage and the length of time of administration. The development of resistance may be controlled by decreasing the duration of treatment. Both of these changes will impair therapeutic efficacy, especially if they are carried beyond the above recommended limits. Newer interrupted type regimens are now under investigation with promising results. In these patients, 1 to 2 grams of

streptomycin are given every third day for 120 days, or daily for 4 weeks. This regimen is followed by a rest period of 4 to 6 weeks, after which a repetition of the 4 weeks' course is given. In cases with impaired renal function, the dosage of streptomycin should be reduced inasmuch as there may be impaired excretion of the antibiotic. So far, an ideal therapeutic regimen has not been established.^{35, 36}

The use of para-aminosalicylic acid (PAS) is a new addition to the chemotherapy of tuberculosis.³⁸ This drug tends to inhibit or significantly delay bacterial resistance to the antibiotics. This property makes it possible to prolong the length of administration of streptomycin. In addition, PAS, itself, has a suppressive effect on the tuberculous process.³⁹ When it is administered with streptomycin simultaneously, the efficacy of this combination is greater than that of either drug alone. Therefore, the combination of the drugs permits the use of smaller doses of streptomycin.

The PAS inhibits growth of both the streptomycin sensitive strain and the naturally occurring streptomycin resistant variants. Resistance to this drug probably develops but the frequency of this occurrence has not been established.

Toxicity of PAS is manifested by gastrointestinal irritation (anorexia, nausea, vomiting, diarrhea). Isolated instances of hypoprothrombinemia, fever, skin reactions, and transient renal impairment have been reported.

The indication for PAS administration is in combination with streptomycin, or alone, if streptomycin is contraindicated (in resistant organism or due to toxic effects from the streptomycin). The dosage range is 10 to 15 grams daily, given orally in divided doses of 3 to 4 each for 90 to 150 days or longer.

There are other chemotherapeutic agents used in the treatment of tuberculosis. The

38. Sweany, H. C.; Turner, G. C.; Lichtenstein, M., and Eustin, S.: A Preliminary Report on the Use of Para-Aminosalicylic Acid in the Treatment of Pulmonary Tuberculosis, *Dis. of Chest* 16: 633, 1949.

39. Para-Aminosalicylic Acid in the Treatment of Pulmonary Tuberculosis, Editorial, *J. A. M. A.* 141: 605, 1949.

sulfons, which are chemically related to the sulfonamides, are used in combination with streptomycin but their toxicity limits their use. Promin, Promizole, Diasone, and Sulphetrone are the known members of this group. They are ineffective alone but may have synergistic effect with streptomycin.

Another drug, TB-I (Thiosemicarbazone), is under study. No reports as to its effectiveness have appeared to date. A new antibiotic that gives promise is Neomycin. This is under clinical investigation at present.

Tularemia: Although aureomycin and streptomycin appear to be equally effective, aureomycin is considered the drug of choice. Chloromycetin appears to be inferior to these drugs in the therapy of tularemia.

Typhoid Fever: In this infection, chloromycetin is the most effective therapeutic agent. A recent report states, however, that while chloromycetin controls clinical symptoms and signs, relapses occurred, complications were not prevented, and stool cultures remained positive in some of the patients.⁴⁰ There was no effect on typhoid carriers and no effect in salmonella infections.

It is the consensus of several investigators that at least 14 days' treatment is necessary to avoid relapse.⁴¹

Viral Infections: Aureomycin has proven effective after clinical trials in the following diseases of viral origin: atypical pneumonia, lymphogranuloma venereum, psittacosis, influenza, herpes zoster, herpes simplex (topical application), dermatitis herpetiformis, lymphocytic choriomeningitis, acute non-specific pericarditis and trachoma.^{22, 42, 43, 44} The effect of this antibiotic in infectious mononucleosis is still controversial.^{45, 46, 47} Trachoma responds also to sulfadiazine administered systemically, together with local application of penicillin.

40. Chloromycetin in Typhoid Fever and Other Salmonella Infections, Editorial, New England J. Med. 242: 191, 1950.

41. Swadel, J. E.; Bailey, C. A., and Lewthwaite, R.: Synthetic and Fermentation Type Chloramphenicol (Chloromycetin) in Typhoid Fever: Prevention of Relapses by Adequate Treatment, Ann. Int. Med. 33: 1, 1950.

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SUMMARY AND CONCLUSIONS

A brief symposium on the present day treatment of infectious diseases with chemotherapeutic and antibiotic agents is presented.

Aureomycin in Dermatitis Herpetiformis (Preliminary Report), J. Invest. Dermat. 13: 9, 1949.

44. Taubenhaus, M., and Brams, W. A.: Treatment of Acute Nonspecific Pericarditis With Aureomycin, J. A. M. A. 143: 973, 1950.

45. Gruskin, B. J.: Aureomycin in Acute Infectious Mononucleosis, Ann. Int. Med. 31: 687, 1949.

46. Seifert, M. H.; Chandler, V. L., and Van Winkle, J., Jr.: Aureomycin in Infectious Mononucleosis, J. A. M. A. 142: 1133, 1950.

47. Spink, W. W., and Yow, E. M.: Aureomycin: Present Status in the Treatment of Human Infections, J. A. M. A. 141: 964, 1949.

Does the Health Officer Have Status?—Most physicians will agree that public health has proved its value in the prevention of diseases, the prolongation of life and the promotion of physical and mental efficiency. If this is recognized, one must recognize the part that the health officer has played. In my state it was a practicing physician and his county medical society, with the backing of the state medical society, who convinced the state legislature of the need for a state board of health nearly 75 years ago. The recognition of need for this unit originated not with the general public but with physicians. These physicians saw clearly the need for a central body by which the perplexing problems dealing with widespread epidemics and with sanitation could be studied and solved. The rural areas, then comprising nearly all of the state, were in desperate need of help. Eventually they got it as a result of action based on reports of illnesses and deaths that were gathered and analyzed by the state board of health.

It is a matter of record that the board of health has taken every advantage of its position as an official body charged with "responsibility for the health and life of citizens" to push immunization so that smallpox, diphtheria and whooping cough, formerly killers of hundreds of children in the state, are practically nonexistent today. This has been accomplished by direct appeal to parents with the cooperation of practicing physicians. The provision of safe public water supplies and sewage disposal has now advanced so that typhoid has practically been eliminated.

The older practicing physicians have witnessed this tremendous change—and it has been tremendous. Today, medical students in my section of the country have little or no opportunity even to see a case of smallpox or diphtheria or typhoid before graduation and have little prospect of seeing them in their practice. These are accomplishments largely creditable to the efforts of public health departments. They are familiar to the public. Similar developments differing somewhat from state to state have taken place throughout the country.—Neupert, J. A. M. A. Dec. 30, '50.

DANGERS OF THE TIE AND DROP METHOD OF APPENDECTOMY

Jo Rogers Hood, M. D.
Birmingham, Alabama

Since the advent of appendectomy and its popularization by Dr. John D. Murphy at the turn of the century, this operation has been done with increasing frequency, until now it is one of the most frequent of all abdominal operations. To validate this statement, it may be said that, in an average hospital, appendectomies are about equal to all other major surgical procedures, as evidenced by the following: Of almost three thousand admissions, over thirteen hundred operative procedures were done. These consisted of some eight hundred minor operations and over five hundred major operations. Of the major operative procedures, appendectomy comprised some two hundred and ninety.

The various techniques involved in an appendectomy may be simply summarized into three major groups: (1) The classical method in which the stump is tied and inverted, with closure being done by means of a purse string suture; (2) The Ochsner method in which the stump is not tied, but which is inverted with a purse string suture; (3) The tie and drop method, where the stump is tied and no further attempt is made to bury or invert the stump itself. Many arguments are advanced in favor of this last method. Also, many an excellent surgeon who deplors this method will occasionally admit that he resorts to it in cases where he feels that the inflammation involving the base of the appendix and cecum is of such extent that inversion is impossible or ill advised. Such reasoning would appear to be fallacious. Actually, the only real argument for the tie and drop method is its simplicity and speed of execution. It does not represent an adequate or a good surgical procedure. It perhaps represents analogously the never practiced procedure of merely tying a string around the duodenal stump in doing a gastric resection.

It is the purpose of this paper to point out the dangers involved and the complications arising from use of the tie and drop method of appendectomy.

CASE HISTORIES

Case 1. G. McG., a 22 year old white male, was seen on September 8, 1947 with the presenting complaint of a persistent draining sinus in an old McBurney type appendectomy scar. The patient stated that approximately one year ago he had an acute attack of appendicitis at which time he was operated on and an acute appendix was removed, the method of appendectomy being the tie and drop method. Convalescence was uneventful and the patient was discharged from the hospital and returned to work. About two months later he noticed that an occasional drop of pus would exude from the old scar. Subsequently, it was decided that some foreign material was still present in the wound and the incision was reopened, debrided and resutured. However, no attempt was made to enter the peritoneal cavity at that time. The second wound healed uneventfully and no further difficulty was encountered until two months later when the wound again exuded some purulent material. This became a daily occurrence and necessitated admission of the patient on my service on September 8, 1947. Examination of the wound at that time revealed a small pin-point opening from which a drop of pus could be expressed by mild contralateral compression. Culture of this material revealed an almost pure culture of *B. coli*. With the above history and this finding, it was felt that the opening was in connection with the large bowel at some point. A large and small bowel study was accomplished without the demonstration of any abnormality, however. An operation was performed under spinal anesthesia and the old scar was excised. The central portion of this scar was not removed, however, but was freed up from the external oblique and internal oblique muscles and transversalis fascia down to the peritoneum. At this point it was found to be adherent to the peritoneum and also adherent to the cecum and part of the ileum. This was carefully dissected away, and a mass considered to be a portion of the appendix, filled with purulent material, was found. It was tubular in shape,

running from the end of the tenia libera of the cecum and thence down between the mesenteric fold to the terminal ileum. Numerous adhesions were encountered in this region where the greater omentum had been purposely placed as a protective procedure. The tubular mass was then dissected free. It was found to be fixed to a portion of the terminal ileum at its distal end. The terminal ileum was also attached to the cecum where a spontaneous enterocostomy had occurred. The mass was dissected backwards to the base of its attachment with the cecum. A wedge-shaped incision was then made in the cecum and the mass removed en bloc. Finally, the defects in the cecum and ileum were repaired in the classical manner and the abdomen closed without drainage. Recovery was uneventful, the operative wound healing per primam. Pathologic report confirmed the suspicion that the tubular mass was an appendix which was the seat of subacute inflammation. Follow-up examination one year later revealed the wound to be well healed without evidence of infection or herniation. The patient has been asymptomatic since the corrective procedure and had no symptom of wound difficulty at the time of follow-up examination.

Case 2. G. E., a 32 year old white male, was admitted to the hospital on August 10, 1947 with an admission diagnosis of appendiceal adhesions, secondary to appendectomy. The patient stated that twenty-eight months prior to this admission he had developed acute appendicitis. An appendectomy was done at that time, with removal of a ruptured appendix. Ten months following this procedure, the patient suffered an attack of acute pain in the right lower quadrant, accompanied by high fever and a tender mass in the right lower quadrant. The mass was incised and drained and a large quantity of pus recovered. Convalescence was uneventful and the patient remained asymptomatic thereafter until his present admission. On admission to the hospital on my service, the patient complained of vague gastro-intestinal pain, some nausea, and tenderness in the right lower quadrant. Physical examination at that time was non-contributory except for the presence of a wide, enlarged, healed McBurney incision scar. Complete study, both laboratory and x-ray, failed to reveal any abnor-

malities. Psychiatric consultation was held and the patient discharged with the diagnosis of (1) psychoneurosis and (2) adhesion fixation.

On September 24, 1947, at 2:30 A. M. he was readmitted to the hospital with a history of acute pain in the right lower quadrant of twelve hours duration, nausea, vomiting, and temperature of 103°. Upon examination, there was right rectus rigidity with marked tenderness over the old appendectomy scar. The white blood count was eighteen thousand with an increase in neutrophilic granulocytes. It was felt that the patient had a ruptured hollow viscus, probably appendiceal stump, with resultant peritonitis. Therefore, laparotomy was done under spinal anesthesia. The abdomen was opened through the old scar, which was close to the right rectus muscle. Upon opening the abdomen, the wound became flooded with foul smelling, purulent material which was removed by aspiration. This material appeared to be coming from the cul-de-sac. Once the field was clear, the cecum was delivered into the wound and a large inflammatory nub of intestinal tissue, which looked like an appendix, was found. This was resected under "aseptic conditions," along with a plug of the cecum. It was noted that rupture of the base of the stump of the appendix was present. The resected area was closed with typical Lembert type sutures. Two rubber tissue drains were placed in the wound, one to the cul-de-sac and the other to the right paracolic gutter. The wound was then closed with through and through stainless steel sutures. Convalescence was uneventful and the drains were subsequently removed on the fifth postoperative day and the sutures on the tenth postoperative day. Follow-up examination one year later revealed no abnormalities.

DISCUSSION

These two cases are, perhaps, exceptional but concretely represent examples of the dangers of the "tie and drop technique of appendectomy." It is a point of conjecture as to the exact mechanism of such complications. Fundamentally, two possibilities can be considered: either (1) a portion of the stump of the appendix was left with subsequent continued suppuration, or (2) a diverticulum or pseudo-diverticulum of the cecum was formed at the weakened site

where the appendix was amputated. The first possibility would appear to be the more logical of the two. In both of the cases presented, appendicitis existed after appendectomy. Case 1 exhibited subacute appendicitis, complicated by an intermittent fecal fistula. Case 2 had an acute gangrenous appendicitis with an acute rupture.

In a series of one hundred one cases of the author's in which a preoperative diagnosis of appendicitis was made and only an appendectomy was done, the following technique has been employed. In certain instances, minor technical variations were necessary which did not affect the general surgical principles outlined herein. The appendix, upon being delivered into the wound, was immediately clamped with a standard curved Kelley clamp, at its junction with the cecum. At all times it was considered best to err in clamping toward the cecal side rather than the appendiceal side. After clamping, the meso-appendix was dealt with as the situation presented itself and freed from the appendix. A self-inverting type of purse string suture was then inserted into the cecum (as described by Spivack) and the appendix amputated and inverted without tying the stump. The inverted areas were then reinforced with a "Z" type or Lembert suture. Spool cotton was used exclusively for all suture material. Of these one hundred one cases, thirty-three were either gangrenous or ruptured. Four of the cases, in spite of adequate postoperative antibiotic therapy, developed abscesses. However, in spite of the mass of infections, no fecal fistulae resulted. Hence, it is felt that it is practical to invert all cases of appendectomy.

SUMMARY AND CONCLUSION

(1) Two cases of complication following tie and drop method of appendectomy are presented with their subsequent handling. (2) A series of one hundred one cases in which the appendiceal stump was successfully inverted or sited is referred to. (3) It is suggested that all stumps can be inverted without danger. (4) Inversion of the stump should prevent the above cited complications.

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Rehabilitation of Cardiacs—In spite of the obviously greater safety for himself or others, a cardiac may oppose job placement for several reasons. Transfer to a more suitable job may mean a reduction in income or loss of seniority. In many cases such a change of jobs may come into conflict with union rules, which forbid a transfer of job which entails a loss of seniority or a reduction in income. Sometimes a transfer to a less strenuous job will cause jealousy among other workers who do not realize the cause of the transfer and think only that favoritism is being shown. In fact, it is the very invisible or intangible nature of the disability which causes the misunderstanding. If the patient had lost a leg or an eye the other workers could see the cause of seeming preference in job placement. The worker, on the other hand, would accept decreased income resulting from an obvious visible defect as a matter of course and even with gratitude that he was still able to do some work. After suffering a heart attack, however, a man faced with the necessity of supporting a family or meeting other demands on his income may actually try to minimize or hide his need for reduced physical effort and thus endanger himself and others. This is particularly true of heavy manual workers who have no skilled trade to fall back on. This points to the prime importance of a proper cooperation between the patient, his physician and the plant physician, nurse, or foreman, in cases of illness occurring among factory workers. A case in point is that of a man who has a cardiac infarction and was out of work for three months. Should he return to work with a statement from his physician simply that he had been ill and absence from work was necessary, or should his sickness report be misleading or inadequate, great harm may be done. He may return to strenuous work too soon, thus causing harm to himself or inefficiency at his work. Even if his true condition is discovered it may take some time to find a job suitable to his condition or to give him training for a new job. All this means loss of time, loss of income, frustration and unhappiness for the worker. How much better it would be for the family doctor, who can prognose the patient's capabilities and needs, to contact the employer before the patient returns to work. Then a frank discussion with the plant physician, nurse, or foreman would enable suitable work to be planned in advance of the return to work.—*Massee, J. M. A. Georgia, Dec. '50.*

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THAT OTHER FLAG

At the American National Red Cross building in Washington, a block from the White House, two flags fly side by side—the Stars and Stripes, and the Red Cross flag of mercy. These two flags are as inseparable in national emergencies as on the battlefield.

A Washington newspaper recently called the Red Cross “Old Reliable,” going on to say, “When war erupts . . . or when nature goes on a rampage, Americans turn instinctively to their Red Cross . . . but people’s memories fade in . . . days of peace, and the organization has a tough time collecting its funds.”

In adopting the slogan “Mobilize for Mercy” for its March 1951 fund campaign, the Red Cross asks the help of every American, not only in supplying badly needed funds for its expanded work for the armed forces and civil defense but in recruiting volunteers to make this work possible.

In addition to continuing its regular work, the American Red Cross has been asked to expand its activities as follows:

1. The Blood Program. The Secretary of Defense last summer asked the American Red Cross to be the official blood procurement agency for the needs of the armed forces. The National Security Resources Board also has requested that the Red Cross coordinate a nation-wide blood program for civil defense. Therefore, including its regular peacetime program, the Red Cross will be responsible for procuring large quantities of blood by the end of this fiscal year.

2. First Aid. The NSRB has asked the Red Cross to undertake the training of as many as 20 million persons in first aid, including all civil defense workers. This is no short-time job, and, in accepting it, the Red Cross looks to the public both to fill classes and to help instruct those classes.

3. Nurse’s Aides and Home Nursing. In an emergency, hundreds of thousands of women will have to give nursing care to their families and their neighbors. More hundreds of thousands will be needed to serve as nurse’s aides in hospitals, at blood centers, and emergency shelters. The Red Cross has accepted from the NSRB the responsibility for recruiting and training these women in home nursing courses and as nurse’s aides.

To do its regular job as well as an emergency one, the Red Cross will need millions of volunteers—as blood donors, as nonprofessional workers in hospitals, as drivers for Motor Service, and as other workers in connection with all local chapter needs. The Red Cross has a long history of trained volunteer service. How much can you give to help make Red Cross know-how count in 1951? How much will you give to keep that other flag flying?

CEREBRAL PALSY

Three possible ways in which to prevent new-born children from being afflicted with cerebral palsy resulting from Rh factor incompatibility are suggested in an article by a noted cerebral palsy authority in the current issue of *The Crippled Child* magazine, a publication of the National Society for Crippled Children and Adults, the Easter Seal Agency.

Dr. Meyer A. Perlstein of Chicago, a counselor for the National Society and chief of the Children's Neurology Clinic at Chicago's Cook County Hospital, believes the most effective way to prevent this crippling condition is through selective marriages of Rh negative women with Rh negative men.

He points out that cerebral palsied children resulting from Rh incompatibility of the parents come only from the marriage of an Rh negative woman and an Rh positive man.

Dr. Perlstein's article, "The Rh Factor—What It Means," also outlines two other preventive methods. One is total blood transfusion for the child suffering from the effects of blood incompatibility and the other, still in an experimental stage and unproven, is use of injections of protective substances to prevent the pregnant woman's blood antibodies from damaging the child.

Dr. Perlstein in his article presents in lay terms the answers to many of the prevalent doubts and misunderstandings on the part of the public regarding the Rh factor.

The article discusses the meaning of the term "Rh negative and Rh positive" and tells briefly what happens when incompatibility is present.

It tells also that only one in 25 children born to Rh negative mothers will develop

the condition known as erythroblastosis fetalis and, that of those who do, only one in five will develop cerebral palsy.

He emphasizes prevention as the most important way to meet the problem of cerebral palsy from this cause. "The most effective method of preventing sequelae is before pregnancy," he says. "To this end, if a woman is aware of her blood type and husband's blood type, she may plan accordingly with respect to child-bearing. Also it may be that by making Rh testing a premarital requirement, Rh negative girls will seek out their consorts from among Rh negative men. It might be noted here that if the present suggestion to have the complete population typed because of the danger of bombing it is very likely that the percentage of Rh babies may be lower, since there is no better medicine in prophylaxis than education."

DEFENSE AGAINST ATOMIC ATTACK

The American College of Radiology, a national association of physicians specializing in the application of x-ray, radium and radioactive isotopes, has announced that it is instituting an intensive program of educating its 3,000 members throughout the country in the radiologic aspects of defense against atomic attack.

In announcing the program, Dr. C. Edgar Virden, Kansas City, Missouri, president of the College, said that "it is imperative that all radiologists understand the various aspects of civilian defense against an atomic attack.

"Radiologists are doctors of medicine specially trained in the use of the sort of radiant energy produced by an atomic explosion," he said. "To use radiation the radiologist must be fully aware of its dangers and special effects as well as its medical values. Circumstances have made the radiologist a key figure in any civil defense program. The American College of Radiology is attempting to provide the radiologists in every community with the most up-to-date knowledge that is available.

"No community," Doctor Virden continued, "has to be without radiologic consultation in planning its civil defense program," adding that the American College of Radiology, which maintains offices in the Civic

Opera Building in Chicago, is ready to aid any community needing advice or help.

The College is approaching the radiologic defense problem from four angles:

1. Organizational cooperation with the national civil defense program and assistance to state and local civil defense programs through state and local radiological societies.

2. The education of all radiologists in the various aspects of radiologic protection and defense.

3. The institution of courses of instruction in radiologic defense in medical schools, hospitals, and other institutions for the education of physician staff members and medical students.

4. Assistance to local civil defense committees in the education of the public in the problems relating to radiologic defense.

The College has purchased and distributed a resume of the Government publication, "The Effects of Atomic Weapons," and will test its membership on knowledge of the contents. Pertinent parts of the hearings before the Joint Committee on Atomic Energy of the Congress of the United States have been distributed to members and other specialized essays, dealing with subjects such as the instruments used in detecting radiation, are to be mailed soon.

On February 10, 1951, in Chicago, the College is sponsoring a national conference at which authorities on various phases of radiologic defense will inform the attending radiologists of latest developments and successful defense methods. This conference will serve as a model for local courses in radiologic defense throughout the Nation.

MEETINGS

AMERICAN COLLEGE OF SURGEONS

Opening Monday morning, January 22, at 8:30 o'clock, and continuing through Wednesday, January 24, at the Hotel Statler, St. Louis, will be a Sectional Meeting of the American College of Surgeons embracing the entire central region of the United States. Surgeons, members of the medical profession at large, medical students and hospital personnel are invited to attend the sessions, which will begin Monday and Tuesday mornings with the showing of medical motion pictures, followed by scientific ses-

sions and hospital conferences. On Wednesday a clinic program will be presented at 14 local hospitals. Dr. James Barrett Brown is chairman of the St. Louis committee on arrangements.

The scientific session opening at 10 o'clock on the first morning will include the following talks: Surgery for Ischemic Diseases, Dr. Howard R. Mahorner of New Orleans; The Emergency Management of the Injured Chest, Dr. John H. Mayer, Jr., Kansas City, Missouri; Fractures about the Ankle Joint, Dr. Rex L. Diveley, Kansas City, Missouri; and Hematuria Following Trauma: Present Means of Diagnosis and Treatment, Dr. Leo P. Dolan, Toledo. The hospital conference on Monday morning will be on community relations with the theme "The Hospital in the News and on the Air."

Two panel discussions will feature the scientific sessions on the first afternoon. The first, on "Neck Surgery," will be conducted by Dr. James Barrett Brown, St. Louis. The other panel will be on "Acute and Chronic Osteomyelitis," and will be conducted by Dr. James J. Callahan of Chicago. The hospital conference will be on "Teamwork in the Operating Room."

A dinner will be held on the evening of the first day. Dr. Evarts A. Graham of St. Louis, a Regent of the College, will preside. Dr. Paul R. Hawley, the Director, will present a brief talk on College activities. Dr. Melvin A. Casberg of St. Louis, Dean and Associate Professor of Surgery, St. Louis University School of Medicine, will speak on "The Medical Organization of the Chinese Communists." The dinner meeting will be followed by a Symposium on Cancer, and by a hospital conference on "The Role of Hospitals in Civilian Defense."

The first speaker on the second morning will be Dr. Oscar P. Hampton, Jr., of St. Louis, who will discuss "Are We Fulfilling Our Responsibility to the Injured?" at a meeting of Regional Committees on Trauma and Forum on Associated Problems; these committees will meet from 8:30 to 10:00 a. m., and all registrants are invited to attend.

At the scientific session from 10:00 to 12:00, Dr. Ralph R. Coffey, Kansas City, Missouri, will preside. The speakers will be as follows: Dr. Richard E. Heller, Chicago, on "Trends in Varicose Vein Surgery"; Dr.

Alton Ochsner, New Orleans, on "Carcinoma of the Stomach"; Dr. Richard B. Cattell, Boston, on "Special Problems in the Surgical Treatment of Ulcerative Colitis"; and Dr. George Saslow, St. Louis, on "Personality Functioning and Ulcerative Colitis." The hospital conference will be on "How American College of Surgeons' Activities Benefit Hospitals."

The scientific program for the second afternoon will consist of panel discussions of "Emergencies Arising During Operation" and "Proper Relationship Between Patient, Physician, Consultant and Hospital." The moderator of the first panel will be Dr. Richard B. Cattell, Boston; the moderator of the second panel, Dr. Paul R. Hawley, Chicago. Hospital representatives will attend the second panel following a conference from 2:00 to 3:30 on Trustee-Hospital Relationships.

The hospitals which will hold clinics on the third day, January 24, are as follows: Barnard Free Skin and Cancer Hospital, Barnes Hospital, DePaul Hospital, Firmin Desloge Hospital, Homer G. Phillips Hospital, Jewish Hospital, Lutheran Hospital, St. Anthony's Hospital, St. John's Hospital, St. Louis City Hospital, St. Louis County Hospital, St. Luke's Hospital, St. Mary's Group of Hospitals, and Veterans Administration Hospital.

The American College of Surgeons has a fellowship of more than 17,000 surgeons in the United States, Canada, and a few other countries. Dr. Henry W. Cave of New York is President; Dr. Arthur W. Allen of Boston is Chairman of the Board of Regents; and Dr. Paul R. Hawley of Chicago is the Director. Headquarters are in Chicago. The St. Louis meeting is the first of seven sectional meetings to be held in the United States between January 22 and May 11. The second meeting will be held at The Homestead in Hot Springs, Virginia, February 26 and 27; the third at The Bellevue-Stratford, Philadelphia, March 5, 6 and 7; the fourth at the Hotel Taft, New Haven, March 16 and 17; the fifth at the Hotel Multnomah, Portland, Oregon, March 26 and 27; the sixth at the Cosmopolitan Hotel, Denver, April 5, 6 and 7; and the last at the Book-Cadillac Hotel, Detroit, May 9, 10 and 11.

CORRESPONDENCE

AMERICAN COLLEGE OF SURGEONS
CHICAGO 11, ILLINOIS

Editor
Journal of the Medical Association
of the State of Alabama
537 Dexter Avenue
Montgomery, Alabama

Dear Doctor:

I am writing to extend a cordial invitation to members of the Medical Association of the State of Alabama to attend a two-day Sectional Meeting of the American College of Surgeons at Hot Springs, Virginia, on February 26 and 27. The Homestead will be headquarters for the meeting, and requests for hotel accommodations should be directed to The Homestead in Hot Springs.

The program for this meeting will include new surgical motion pictures, a special program on trauma, a cancer symposium, and panels or papers on the Effect of Vasodilator Drugs on the Circulation of the Extremities, Chest Injuries, Fractures about the Ankle Joint, Neck Surgery, Peptic Ulcer, Cancer of the Tongue and Mouth, Cancer of the Cervix, Cancer of the Lung, Injuries to the Biliary Ducts, Ulcerative Colitis, Surgical Aspects of Acute Head Injuries, Rehabilitation of Severely Burned Patients by Plastic Surgery, Emergencies Arising During Operation, and Surgery of the Colon, Anus and Rectum.

A five-dollar registration fee will be required, except from Fellows and members of the Junior and Senior Candidate Groups of the College, and interns and residents, but we are confident that the physician or surgeon in practice will find the program worth many times the registration fee.

As Chairman of the Committee on Arrangements I can assure you that the Fellows of the College in Virginia will give full cooperation in assisting members of the Medical Association of the State of Alabama to take full advantage of this excellent meeting if they will come to Hot Springs on February 26 and 27.

Sincerely yours,

Claude C. Coleman, M. D., F. A. C. S.
Chairman, Committee on Arrangements

Nov. 29, 1950.

ALABAMA DIVISION
AMERICAN CANCER SOCIETY
RAMSAY-McCORMACK BUILDING
BIRMINGHAM, ALA.

Editor-in-Chief
Journal of the Medical Association
of the State of Alabama
537 Dexter Avenue
Montgomery 4, Alabama

Dear Doctor:

I wonder if in the next issue of the Medical Journal you would make mention of the fact that there are now three medical films in this office, 907 Ramsay-McCormack Building, Birmingham 8, which can be borrowed for County Medical Society meetings.

One is "The Problem of Early Diagnosis"; another is "Breast Cancer." This is not to be confused with the lay film "Breast Self-Examination," which we also have available, and the new "Gastro-Intestinal G-I."

I feel that for County Medical Societies these would be especially valuable, and we are very happy to supply them without any charge, of course, to any Society that might desire them.

All we ask is that they give us enough notice so that we can get the film to them.

Will very much appreciate a little notice on this for the doctors, as I think perhaps they do not realize the films are available for their use.

Sincerely yours,
Mrs. Lillian G. Meade
Executive Director

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

WHAT'S IN STORE?

W. A. Dozier, Jr.

Director of Public Relations

What's in store in the future for you and me and all other people in our country? Naturally, that is a question that is unanswerable. If anyone could foresee the future, the planning would be much easier. But since the jackpot question cannot be answered in advance, it behooves each of us to look at some of the present facts and prognosticate a bit. Thus perhaps it will be possible to be ready for some of the pitfalls when they approach. Only in this manner may these floundering places be side-stepped.

At the time of this writing, this country is in an undeclared war. Call it "police action" or anything else you like, but the people on the front lines cannot tell the difference. Just because the Chinese have never declared war *per se* does not mean they have not been warring for many years among themselves; and a man who is killed in an undeclared war is just as dead as one killed after a declaration is made. So call it what you like, but face up to the fact that the dangers and the ultimate pressures are those of war.

Since we are in our unnamed situation, we are faced with the possibility, nay the probability, of greater and greater controls from Washington on every phase of our lives. What forms these controls will take, how far they will go, and how long they will last, are questions which most of us, the people, cannot determine. From here and judging by the past few weeks, it looks as if we are headed for total mobilization. With such a move we must expect complete regi-

mentation to a degree far greater than was experienced during World War II.

Besides controls we are also faced with the problem of how to finance a war. Are we to continue borrowing and increasing the national debt, or do we think that even the Keynesian theory has been stretched as far as it can go? On the other hand are we prepared to see taxes go up and up? This question we must be prepared to answer in light of what we think the ultimate result on our way of life will be. Both plans have dangers which cannot be overlooked, yet both have advantages. Each of us must look into this and must decide what he thinks.

Then facing us is the question of just what will be our economic situation at the end of one, five, ten, or any given number of years. How much can our economy stand? How far backwards will we have gone, economically speaking? Then place that picture beside the other alternative, that is failing to back the U. N. Where would that decision lead us? How much better than the League of Nations is the United Nations? If the U. N. collapsed, where would we be?

This sort of academic questioning could go on *ad infinitum*. The principal question to be propounded is this, "How may we best act to insure ourselves our greatest ultimate freedom—political, economic, personal?" This is one question you must decide for yourself. There are many facets to the questions in the above paragraphs, and those questions mentioned are not definitive. They and many others are facing us today and all of them will bear heavily on the future of our country. During the past two years the medical profession has taken the lead in trying to help keep our nation one

of free enterprise. We are now faced with even greater problems, and it behooves the profession to take its place in solving these problems. Let every man think through

these matters to the best of his ability, talk with others, and then make his decision. After that process, make your thoughts known.

WOMAN'S AUXILIARY

Mrs. J. G. Daves, Cullman, President

DOCTOR DUKELOW VISITS ALABAMA



Through arrangements made by the Woman's Auxiliary to the Montgomery County Medical Society, Birmingham and Montgomery are to be honored February 13-16 by a visit on the part of Dr. D. A. DukeLOW, Consultant in Health and Fitness, Bureau of Health Education of the American Medical Association, Chicago. In Birmingham on the 13th and 14th, with Mrs. W. J. Rosser in charge, he will address civic groups and the local Auxiliary; and he will make similar appearances in Montgomery on the 15th and 16th, with Mrs. Leon Rosen as hostess.

LEGISLATIVE NEWS

While the election brought cheering news to most doctors, words of caution are now being spoken by many medical leaders. Dr.

George F. Lull, the A. M. A.'s Secretary and General Manager, pointed out that, after all, the big exponent of socialized medicine, Mr. Ewing, is still in office.

"The profession, as a whole, cannot afford to rest on its oars and breathe an air of complete confidence," he said. "For all of us to enjoy complete contentment and overconfidence at this time would spell disaster in the future."

His words were echoed by President Carlton E. Wertz at the recent meeting of county secretaries in Albany, New York. He urged physicians not to become complacent in view of the election returns. Now is the time, he said, to devote more attention to improving public relations, especially by building up doctor-patient relationships and by supporting voluntary medical care plans.

Speculation is rife whether President Truman again will urge Congress to enact national health insurance in his "State of the Union" message in January. He has done so each year in the past, but present indications are that some modification is due this year. A more conservative approach to health insurance seems likely, probably some form of federal aid to voluntary prepayment plans.

Look for Senator Lister Hill to get the chairmanship of the Subcommittee on Medical Care of the Senate Labor and Public Welfare Committee in the 82nd Congress. Appointment to that post would make him a key figure in future health insurance legislation.

A. M. A.'s 12-POINT PROGRAM

We know you are all familiar with the 12-point program of the A. M. A. However, it is the belief of the Board of Trustees of the A. M. A. that further elaboration of the program as to detail is needed, in order that the implementation of it may be more

clearly understood. The statement which follows has been approved by the House of Delegates of the A. M. A.

1. Creation of a federal department of health of cabinet status with a secretary who is a doctor of medicine, and the coordination and integration of all federal health activities under this department, except for military activities of the medical services of the armed forces.

Since 1884, the American Medical Association has urged a Federal Department of Health under a Secretary who is a physician.

At present the various agencies concerned with health are distributed in various government departments. In the interest of efficiency and economy these should be under one head to avoid duplication of effort and diversion of activity.

Various suggestions have been made to establish a Department of Welfare, a Department of Education, Health and Welfare and an independent Health Agency. The health of the people is certainly of sufficient importance to warrant an independent agency, in accordance with the recommendations of the Hoover Commission. The argument has been made that it is not the policy of our government to place an expert in charge of a department, but that the experts should be subservient to the chief of the department. In answer, the A. M. A. feels that no other government department is so closely concerned with the individual person as would be a Department of Health. Other departments deal as a rule with the population as a group. Matters of health are often individual and no other person could be better qualified to superintend individual health than a physician. At this time support of the report of the Hoover Commission on this subject is urged; it recommends an independent Health Agency under which will be assembled all activities concerned with health except those of the armed forces and Veterans Administration.

2. Promotion of medical research through a National Science Foundation with grants to private institutions which have facilities and personnel sufficient to carry on qualified research.

The Steelman Report states that \$110,000,000 is now spent for medical research; \$55,000,000 of this comes from industry and the

balance from the government and from private foundations. These funds are not adequate and further funds for research are difficult to obtain. Bills are now in Congress to establish a National Science Foundation to facilitate coordination of research and to make available funds for research in medicine and other sciences. The A. M. A. recognizes that research is the basis of medical progress and urges the establishment of a National Science Foundation with appropriate federal support.

3. Further development and wider coverage by voluntary hospital and medical care plans to meet the costs of illness, with extension as rapidly as possible into rural areas. Aid through the states to indigent and medically indigent by the utilization of voluntary hospital and medical care plans with local administration and local determination of needs.

The development of voluntary hospital and medical care insurance in the United States has been the most rapidly growing insurance project in the history of the country. The movement started slowly. At the end of the first seven years of voluntary hospital insurance under the Blue Cross, only 2,870,000 subscribers were enrolled. Now, after 16 years, 32,500,000 persons are enrolled in the Blue Cross and over 20,000,000 enrolled in industrial and private plans; all three types are continuing their rapid growth. Medical care insurance developed about five years after the initiation of Blue Cross hospital insurance. After the first seven years there were only 4,845,000 enrolled in nonprofit plans; now, six years later, over 11,000,000 are enrolled in these plans and 26,000,000 others enrolled in commercial and industrial plans. These plans likewise are growing rapidly. Besides these plans there are cooperative and special health plans of labor. For the protection of the public the A. M. A. has aided in the development of standards for voluntary insurance plans. The Association is conducting a campaign to educate both the public and the profession on the value of voluntary medical care plans, recognizing that serious illness is a financial handicap to millions of Americans. The Association is making every effort to assist in extending the coverage and distribution of these plans, particularly in rural areas that now lack them. The As-

sociation has recognized the desirability of a National Voluntary Enrollment Agency for the nonprofit plans to facilitate interchange and enrollment of companies with national payrolls. At least 80,000,000 people will no doubt be enrolled within a reasonable time in voluntary hospital and medical care plans. When this number is added to the 24,000,000 now receiving their medical care in whole or in part from the government, the industrial workers covered by established health plans and approximately 5,000,000 indigent, a greater portion of the population will be provided for than by any other means suggested.

4. Establishment in each state of a medical care authority to receive and administer funds, with proper representation of medical and consumer interests.

In each state an authority may be created to receive, administer and distribute funds from government sources, thus preventing duplication of effort and insuring that all needs will be met. Such an authority should have representation of all groups concerned, including both the distributors and consumers of medical care.

5. Encouragement of prompt development of diagnostic facilities, health centers and hospital services, locally originated, for rural and other areas in which the need can be shown and with local administration and control as provided by the National Hospital Survey and Construction Act or by suitable private agencies.

The A. M. A. supported the passage of the National Hospital Survey and Construction Act (Hill-Burton Bill). Bills are now in Congress to extend the life of this Act and to double the funds available. The A. M. A. supports such legislation with proper controls to insure local origination of demands and demonstration of need. Extension of hospital and diagnostic facilities in areas now lacking them will help solve the problem of a better distribution of physicians.

6. Establishment of local public health units and services and incorporation in health centers and local public health units of such services as communicable disease control, vital statistics, environmental sanitation, control of venereal diseases, maternal and child hygiene, and public health laboratory services. Remuneration of health officials commensurate with their responsibility.

The American Medical Association regards this portion of its program as highly important. Large areas of the country are without proper health service and many of these areas can not afford such service. Prevention of disease at the source will decrease the need for medical care. Bills are now in Congress to extend federal aid to communities that need it for this purpose. The A. M. A. supports legislation that will permit aid to local communities in which suitable organizations have been developed as suggested in item No. 4 (Medical Care Authority), and in which public health agencies are limited to the field of public health.

A shortage of qualified public health officials exists and the schools of public health are graduating too few students. The reasons are largely monetary and political. Often public health officials are not paid in accordance with the scale of pay of other government officials with like or even less responsibility. Frequently, public health officials are subject to political control, making their tenure of office uncertain and efficient service impossible.

7. The development of a program of mental hygiene with aid to mental hygiene clinics in suitable areas.

Mental hygiene is becoming increasingly important. This field is being invaded by charlatans, and the public is being done a disservice. More adequate state controls are needed to protect the public against unqualified practitioners. State medical societies should sponsor the development of suitable mental hygiene clinics where they are needed. The A. M. A. stands ready to assist state societies and other recognized scientific bodies in developing a suitable program of mental hygiene. Although bills have been introduced into Congress on this subject far more consideration and study must be given before any program is enacted.

8. Health education programs administered through suitable state and local health and medical agencies to inform the people of the available facilities in health care.

The success of any medical care program in the United States depends on public cooperation and on keeping the people informed. Through its Bureau of Health Education the A. M. A. sponsors radio broadcasts, prepares pamphlets for distribution,

exhibits on health, and arranges for lectures. Each state and county society is urged to develop a Bureau of Health Education for the public, so that people may be informed not only of facilities available but of progress in medicine.

9. Provision of facilities for care and rehabilitation of the aged and those with chronic disease and various other groups not covered by existing proposals.

The care of the aged and the chronic invalid will henceforth be an increasing problem. The increased span of life brought about by the decrease in infant mortality and decrease in mortality from infectious diseases has resulted in more people living to the age at which they are subject to the degenerative diseases of middle and old age. Since 1900 the population of the country has doubled, but the number of people over 64 has quadrupled. Paradoxical as it may sound, the number of chronic invalids is increasing because these people have received good medical care in youth. The American people need greater provision for the care of chronic illness, but the buildings required need not be as elaborate or costly as those necessary for the care of acute illness. The A. M. A., the American Public Health Association, the American Hospital Association, and the American Public Welfare Association have jointly created a Commission on Chronic Illness which hopes to stimulate the establishment of a program in each state so that the status of the chronically ill may be improved and the continued loss to society because of chronic illness may be prevented.

10. Maintenance of existing high standards of medical care for veterans, including extension of facilities where need can be shown. Where practical, care of the veteran should be in his own community by a physician of his own choice.

The A. M. A. desires that every citizen receive the highest quality of medical care and recognizes the special consideration owed to the veteran. The A. M. A. is concerned that the veteran receive the highest quality of medical care and believes that he can usually be given satisfactory care in his own community by a physician of his choice.

11. Greater emphasis on the program of industrial medicine, with increased safeguards

against industrial hazards and prevention of accidents occurring on the highways, home and on the farm.

The A. M. A. approves the expansion of service in industrial medicine. Accidents are fourth in the list of the causes of death, and automobile accidents constitute one fourth of the list of accidental deaths. The Association is ready to cooperate with the National Safety Council and other organizations to find means of reducing deaths from accidents.

The Council on Industrial Health of the A. M. A. has established a permanent conference group with labor and management to discuss ways and means of extending industrial medicine, accident prevention and health education of workers; to clarify the status of physicians and medical organizations in relation to the entire range of industrial health activity; and to provide a method for the consideration of other aspects of medical service with industrial application.

Professional relations have been established with the various professional groups involved in prevention of accidents.

Expanded service has been developed with workmen's compensation, unemployment compensation and rehabilitation.

Industrial medical care plans are increasing; as good medical standards and resources in industry improve they can be of great service in maintaining independence and self determination, and in counteracting tendencies toward centralization and control.

12. Adequate support, with funds free from political control and regulation, of the medical and allied professional schools.

Some medical schools are finding difficulty in securing sufficient funds for maintenance of their standards of training. The A. M. A. would prefer to see medical schools receive the support they require from private philanthropy or local public funds. Unless and until such support is provided, some medical schools may be forced to accept financial aid from the federal government. Such aid, however, must carry with it the assurance of freedom from political control and regulation.

The responsibility for determining which schools may qualify for federal aid should

reside in the states, thus preserving the freedom and independence of the medical schools. This can be satisfactorily accomplished if the legislation provides that any medical school shall be eligible for financial aid if three-fourths of the states through their medical licensing authorities judge the school to be conducting an educational program of sufficiently high quality to warrant the admission of its graduates to their state examinations for medical licensure.

To encourage continued local support of medical education from public and private funds, the formula for allocating federal aid should provide only a limited portion of a school's total budget.

Since medical schools are already increasing enrollment as rapidly as they can expand their facilities, the provision of a relatively large financial premium which might induce certain schools to enroll more students than they could properly accommodate should be avoided.

The formulas for the allocation of all funds should be simple in principle and written into the law. The responsibility and authority of the officials administering the program should be limited to an audit to determine that the funds are employed for the general purposes for which they were granted. Any federal scholarship program should leave the medical schools entirely free in the selection of their students and should avoid the regimentation of the future careers of the recipients.

The federal government should not assume the function of building and operating medical schools.

The A. M. A. is firmly opposed to the medical care section of Senate Bill 1679 which would establish a national system of compulsory health insurance and certain other sections of the bill; the reasons for opposition to these sections are cited here. The Association also opposes any other bill that lodges primary initiative and control of medical care in a federal bureaucracy; that contains uniform and compulsory features to be established nationally and imposes a direct federal tax on every worker to finance the program. Such plans concentrate further power in the central government. They absorb functions which are better retained at the local level and they greatly increase the over-all-cost of providing health serv-

ices. Most important, existing evidence establishes that such plans lead to a widespread and serious deterioration of the quality of medical care.

Government is unable to deliver the services that are promised and which would be paid for by the plan set forth in this proposal. The proposal constitutes an extreme example of compulsory paternalism, impossible of practical operation and contrary to the principles of American democracy.

The Council on Medical Service of the A. M. A. is holding conferences with cooperatives and various other farm and labor groups. As a result of these conferences progress is definitely being made.

The American Medical Association, through its Board of Trustees, has taken steps toward a conference of representatives of interested groups to consider this 12-point program and such elaboration as may seem indicated in the public interest.

MORE ABOUT NURSING

The Alabama Hospital Association, Alabama Nurses Association and Alabama League of Nursing Education are sponsors of the Alabama Student Nurse Enrollment and Counseling Service, of which Miss Frances Raley is Counsellor. The office is 2119 First Avenue, Birmingham, Alabama. Auxiliary members and members-at-large can do much to help them promote the study of nursing.

At a committee meeting on November 29 the Enrollment and Counseling Service laid plans for its nurse recruiting program. The state has been divided into districts, and the service will work in cooperation with Federated Women's Clubs, Home Demonstration Clubs and Medical Auxiliaries.

The objectives of the committee are to present opportunities in nursing to young men and women of high intelligence and good character; and to stimulate the setting up of scholarship loan funds for students unable to finance their education.

In the past it has been thought that the time to put forth effort in nurse recruiting was in the senior high school year. However, it is now believed that by the time a youth becomes a senior he or she has a definite plan for the future. For this reason efforts to interest students in a nursing

education should begin much sooner. This is being done in many states, and there is no reason Alabama could not follow the program that has been proven so successful elsewhere.

Nowhere is there more convincing evidence that nurses are driving forward in developing their work into a true profession than in their willingness to assume the responsibility of recruiting worth-while candidates for the nursing field.

One of the most successful ventures undertaken thus far in this highly important work is the movement known as "Future Nurses Clubs." Despite the fact that they are not recognized or organized on a national basis, various groups with approximately similar aims and activities have been formed in high schools throughout the country. Their method of organization and their sponsorship may differ but in each case their motivation has been the same; to offer guidance to young boys and girls contemplating nursing as a career.

Although such clubs are only now beginning to spread under limited organized sponsorship, individual high school units have been in existence for a number of years. Twenty-five years ago, Miss Bessie Donaldson, R. N., a graduate of the Long Island Hospital School of Nursing, organized a nurses' club at Bay Ridge High School, Brooklyn, N. Y. where she was then instructor in home nursing. Since that time, nearly seven hundred members of Delta Phi Nu (Donaldson's Prospective Nurses) have entered the nursing field.

In 1933, Miss Frances Fritchey, a former nurse who is now a teacher of modern languages at Woodbury, N. J. High School, organized her nurses' club. Today her group is composed of 40 girls, all seeking advice regarding nursing as a career. Their sources of information are their adviser, speakers from the State Nurse Association, and former club members now in training. Practical experience, the most valuable guidance aid yet devised, was available to war-time club members who organized a ward Aide Service, rendering voluntary assistance at two local hospitals. Many of these ward aides later became cadet nurses. From the 1950 graduating class, eight club members have enrolled in nursing schools, with three of

these planning five-year degree courses. Recognition of the importance of this program is not lacking. This year two nursing scholarships were awarded to Woodbury graduates, one by the wives of the doctors in the county and one by a local service club.

Recently a club was formed in Clearfield (Pa.) High school and membership has already reached a total of 48 girls. Here faculty member, Miss Gretchen Hiller, serves as adviser; and Miss Dolores Probstner, Director of Nurses at the Clearfield Hospital, is professional consultant. Meetings during the year featured talks by a public health nurse, an industrial nurse, and a representative of the State Nurses Association. The highlight of the year's activities was a tour through the hospital followed by a Recruitment Tea.

Valuable though these groups and their activities are on a local scale, it remained for Michigan to enhance their worth by developing them statewide. There are now 70 Future Nurses Clubs in Michigan, 53 of them in Greater Detroit, with a membership of 1,200 girls, and the program is still growing. Under the direction of the Michigan Nursing Center Association and the Detroit Council on Community Nursing the high schools of the state are offering an intensive guidance program to girls interested in nursing.

The value of the Future Nurses Club to both students and high schools lies in the activities which the club offers. Besides receiving guidance, club members carry on many health projects. For example, they sell tuberculosis seals, promote tuberculosis x-ray programs, assist the school nurse, and arrange exhibits and assembly programs. In the field of recruitment, the worth of the club is almost immeasurable in that it provides a perfect channel of information to the school and the public, serves as a testing ground for evaluating the nurse recruitment program, and is a self-perpetuating recruitment device since club members do their own recruiting.

Not only do these clubs meet the primary purpose of guiding those girls who wish to become nurses, but they also help some girls to decide against nursing as a career, which is equally valuable both to the girls and the recruitment program itself.

In order that you may understand how organized Auxiliaries and members-at-large may assist the Alabama Student Nurse Enrollment and Counseling Service in guiding the activities of the Future Nurse Clubs, we list below some of the services of a club.

1. Supplies information about schools of nursing, and on nursing careers.
2. Arranges open house activities twice a year at the local schools of nursing.
3. Has selected a pin which may be purchased at the end of each semester by Club members who have attended 75 per cent of the club meetings.
4. Offers two \$100 nursing scholarships yearly to seniors, on a competitive basis.
5. Sponsors a nursing careers conference once a year, giving recognition to Future Nurses Clubs throughout the state, at which time scholarships and club pins are awarded.
6. Secures publicity in newspapers for club activities and outstanding achievements.
7. Provides a speakers' bureau and a film on nursing.
8. Sponsors an area-wide Intercouncil of Future Nurses, composed of two delegates from each club and one associate representative from high schools not sponsoring clubs who wish to send a representative. Its purpose is to coordinate activities of all clubs and to encourage the organization of more Nurses Clubs.
9. Publishes a Newsletter for Future Nurses Clubs, which contains news of club activities, educational material, and also questions and answers.

These nine services are assumed by the Committee on Careers in Nursing of the Detroit Council on Community Nursing, and are given as reference material of a workable program.

Groundwork for Future Nurses Clubs must be laid by members of the committee. A suggested method is to have a committee member request the high school principal to determine if enough students wish to form a club. If interest is shown, a faculty sponsor, in many instances the school nurse, is chosen and then a rally is planned. The Nursing Council provides a speaker who describes club activities, a student nurse speaks of her experiences in training, and a

film "Girls in White" is shown or a skit about nursing is presented. A wealth of material is available for the prospective nurse.

Future Teachers of America is an organization designed to help high school students learn about the opportunities in the teaching profession in their own locality, state and the nation; cultivate the character traits essential to a good teacher; study lives of great teachers; and develop student leadership. Not content with ending such a program at high school graduation, leaders in the movement also organized units of the FTA in colleges and universities. High school units are called clubs; college units chapters. College chapters offer membership an opportunity to work with local, state and national education associations, thus advancing the aims and interests of the teaching profession.

For the purpose of comparison, attention will be directed only to the high school units. Future Teachers of America Clubs are motivated by the same general aims as Future Nurses Clubs—guidance in the selection of a profession. Their members are from the same age and education levels, their interests are allied, and their activities comparable. But there the resemblance ends. For Future Teachers of America was born, not as an individual unit but as a national organization under the sponsorship of the National Education Association in 1937 at the Horace Mann Centennial Celebration. Today, 13 years later, there are 885 high school units of the Future Teachers of America in 46 states and U. S. possessions.

Such a phenomenal rate of growth gives rise to some pertinent questions: What effect would national organization of the Future Nurses Clubs have on club growth and membership and ultimately on the nurse recruitment program? Is there a lesson for nursing leaders in its tremendous shortage of well trained, experienced personnel? For instance, if Michigan's record in the Future Nurses Club program could be duplicated in the other 47 states, what great advances might then be made in nurse recruitment?

Doctors' wives, we know that both you and your husband realize only too well the acute need for more nurses with our ever

increasing health program. We simply must make every effort to further this nurse recruiting program.

This small request we make of you will seem very small indeed, but when you think it through, we believe you will, perhaps for the first time, appreciate how important it really is. Won't you discuss this with your husband too? Almost every family looks to its doctor for guidance, and so when their most precious son or daughter expresses a desire to become a nurse, it is but natural that they consult the one in whom they have confidence, and one who knows something about the nursing profession. If the youngster is physically and mentally capable, would not the doctor be justified in encouraging a nursing career for the youth. He should not try to cover the fact that the work will be difficult, for an intelligent person knows that anything worth while comes only through tireless effort. Could he not as easily speak of the wonderful work nurses have the privilege of doing; of their service to mankind, unsurpassed in the satisfaction it gives? Could he not speak of the wide field open only to those with a nursing education; advantages only to those with R. N. following their name? Could he not discuss the college degree now obtainable in Alabama? Need he talk with the young man or woman along these lines, and then add: "I would not want my daughter or son to choose nursing as a profession." Just these few added words may turn the table, for what you would want for your child is no better than that which any loving parent wants for his.

As is true for being a doctor, it is no less true for being a nurse: there is no finer profession, and no other commanding greater respect.

This article has been taken in part from a paper written by Marion Scraver Gibbs, "Future Nurses Clubs."

FACTS FOR NURSES

Nurses have labored hard and long to achieve their present high professional stature. Any program which indicates the nursing profession will advance farther and faster will merit a nurse's serious consideration.

Those who favor compulsory health insur-

ance maintain that nurses will benefit materially under a government-controlled health system. This suggestion frequently is based on references to the improvement of conditions and pay for nurses in Great Britain.

While it is true that British nurses today are enjoying a wonderfully improved status—and salaries and emoluments have been increased—those benefits *did not result from nationalization of the health services.*

American nurses should know these facts:

In November 1941, five years before complete nationalization of the health services, a Nurses' Salaries Committee, with Lord Rushcliffe as chairman, was set up. This committee, consisting of two panels of equal numbers, one representing nurses, the other the employing authorities, made a survey. The Rushcliffe Committee made recommendations for increases in pay, a working period of a 96-hour fortnight, and other badly needed improvements in the nursing field. By voluntary agreement these benefits went into effect throughout Great Britain generally in April 1943.

To British nurses this improvement in their status represented a tremendous professional advance. And that step forward was accomplished by cooperation between the medical and nursing professions and lay people; *it was not the result of the National Health Service Act or any governmental decree.*

DOCTORS SALUTE NURSES

The doctors salute the nurses of America: Freedom is on the march! America is proud of its freedom! It is justly proud of the free enterprise that has made it the strongest, the healthiest of all great nations. And the nurses of America can well be proud of the vital role they have played in making our country's health care structure the *finest on earth.*

In much of the world today, freedom is on the defensive. In America it is on the march! In countries where the people have resigned from the responsibilities of managing their own lives, the reward has been the false, tragic "security" of regimentation, of slavery. In America the people have emphatically reaffirmed their belief in human dignity, human freedom.

Side by side with the medical profession, Americans by the millions, through 10,000 responsible public organizations—including farm, business, religious, women's, hospital and civic associations, have registered strong opposition to compulsory health insurance. In one of the greatest economic movements in history more than 70 million Americans, on their own initiative, have sought the protection of voluntary health insurance—the budget-basis protection against the major costs of illness.

Both medical and commercial sponsors are working constantly to improve and extend the voluntary prepay plans—and to include additional services and facilities.

The nurses of America are a living symbol of service to humanity. Together, all of us—nurses, doctors, teachers, technicians, laymen—will maintain the freedom of the medical profession, of all professions, in the sincere conviction that the voluntary way is the American way.

ARE YOU WELL INFORMED?

Are you a well-informed Auxiliary member? You should be, you know, for anyone may ask you the answer to one of the questions below. Everyone has a right to know the factual answers, and you, as a doctors' wife, should have a correct reply to all questions regarding the protection of American health. Test yourself on the following questions:

1. What is compulsory health insurance?
2. Is compulsory health insurance really insurance?
3. Who is for compulsory health insurance?
4. Who is against compulsory health insurance?
5. Why is it proposed at this time?
6. Are these charges true?
7. What is the true picture of the Nation's health?
8. Can the American people afford proper medical care?
9. What is compulsory about compulsory health insurance?
10. Will people who don't wish to use the Government service have to pay the tax?
11. Will veterans who have already paid

for medical care by their war service be taxed?

12. Will members of faith healing religions be taxed?

13. Will people who are already protected under satisfactory voluntary health plans be taxed?

14. How much will the tax be?

15. What does that make the total bill?

16. Why don't the sponsors advise the people honestly and clearly on this all-important matter of cost?

17. Why should the cost, even for second-rate service, run so high?

18. Why is compulsory health insurance called socialized medicine?

19. Would socialized medicine lead to socialization of other phases of American life?

20. What can Americans learn from this?

Answers, in detail, to these twenty questions and to twenty more just as vital are given in a pamphlet prepared by the National Education Campaign, American Medical Association, One North LaSalle Building, Chicago 2, Illinois. Write for your copy of "The Voluntary Way is the American Way" today, in order that you may know the factual answers to the forty vital questions discussed in this booklet. Study them carefully, and help your friends and neighbors to understand why compulsory health is definitely very bad for our America.

STATEMENT OF POLICY

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN

For your information the following text of a statement of policy from Dr. Kathryn McHale, retiring General Director of the American Association of University Women, on May 2, 1950, specifically permits a branch to take a stand on legislation where the Association has not established a position of approval or opposition.

"The legislative program of the American Association of University Women is voted at its biennial convention and no branch may oppose any principle supported by the convention. Where the Association takes no position on a subject, however, branches are free to take any stand they like. It is assumed, of course, that any branch so acting will make it clear that it is acting in its own behalf and expressing its own views and not the views of the national association."

ALCOHOLICS

Do you know an alcoholic whose family seems lost as to knowing what to do about his or her condition? If you do, may we suggest that a book recently written by Mr. Dwight Anderson—"The Other Side of the Bottle," may help that family a lot. It is a gripping and dramatic book, indispensable to the understanding of the alcoholic. It is a 270-page book and sells at a price of \$3.00.

Dwight Anderson is a member of the Board of Directors of the National Committee on Alcoholism. He has been a frequent

contributor to the Quarterly Journal of Studies on Alcohol, the Yale Plan publication edited by Dr. Howard W. Haggard. Since 1935 he has been active in public relations work for the Medical Society of the State of New York. He became Executive Secretary of the organization in 1945. He is the author of "What It Means To Be a Doctor," published in 1939, and was co-author, in 1942, of "When Doctors Are Rationed."

The book may be ordered from A. A. Wyn, Inc., 23 West 47th Street, New York 19, New York.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

HOGS, PORK AND TRICHINOSIS

Hog-killing time does not mean as much to Alabamians as it used to. No doubt we have modern refrigeration to thank—or blame—for that. Youngsters do not look forward for many months, as their parents did, to the time when they can have fresh pork, sausage and other pork products. For those products are now available all the year 'round. There is hardly a time from year's end to year's end when, if you have the money, you cannot go into your favorite grocery store, meat market or delicatessen and buy any kind of hog meat or hog meat product. If it is not "hog-killing" time, your favorite pork delicacy is shipped in under refrigeration and kept at low temperature until it is ready to be cooked.

Nevertheless, many families, in Alabama and elsewhere, still keep and kill their own hogs. They and their neighbors eat much more of these products during cold weather, when they are home-grown and plentiful, than at other times. So "hog-killing" time is not yet completely out of the Alabama picture. Probably it will never be. And that is a good thing. For old-timers will tell you that there's nothing so delicious as good, home-made sausage, pudding and pork. And it is a good old Southern custom to pass around a part of your fresh meat

among your neighbors, so that they may enjoy it too.

But fresh hog meat and its products also have their dangers. For one thing, they may expose you to trichinosis. Fortunately, not all pork and pork products are dangerous from this point of view. You are perfectly safe from this disease as long as you eat the meat of hogs that did not have trichinosis when they were butchered. But the danger is real as long as you buy pork and pork products without finding out where they came from. It is equally real as long as you are not careful about what your own hogs eat.

Most hog trichinosis comes from eating garbage. As you know, that consists of just about everything imaginable. Anything that a family wants to get rid of—from a dead rat to the cold food left on plates after a meal—is thrown into the garbage pail. And some of the contents of garbage cans—small animals like mice, for example—are themselves infested with the parasites. When uncooked garbage is fed to hogs, they are transferred to the larger animals.

That parasite, better described as a parasitic worm, is about 1/25 of an inch long. To the medical profession it is known as the *Trichinella spiralis*. It has a particular fondness for the animals' muscular tissues and, while still in the larval stage, becomes imbedded there. It is usually still in that stage when the animal is killed. People eating the meat without taking proper precautions

(about which more will be said in a few moments) swallow those larvae, which are now encased in transparent capsules. From the mouth, they go to the stomach. There those surrounding capsules are dissolved. The larvae, freed from their long imprisonment, bore into the walls of the intestines. Later they leave the larval stage, becoming mature worms. Maturity brings reproduction, and they reproduce rapidly. Every female parasite of this kind is said to be capable of producing about 1,500 eggs. These also go through the usual processes of hatching, entering the larval stage and laying eggs.

The larvae spend some time in the lymph spaces of the intestinal walls. Then they travel to the blood stream. Like a swimmer swept along by a swift current of water, they go to the heart. From there they travel to many parts of the body, seeking lodgement in the muscles. They bore between the muscle fibres, just as earlier generations of these parasites did in the muscles of hogs. And, also like those earlier parasites, they become encapsulated. (That means they become covered with those transparent capsules.)

You may be said to begin having trichinosis when those larvae become established in the walls of your intestines. The first indication you have may be a stomach upset. That first one, perhaps so slight that you pay little attention to it, is followed by others. Later you begin suffering muscular pains. Your muscles twitch. You are swept by a sense of physical exhaustion, or weakness. Later on, as the disease progresses, you experience other and more conspicuous symptoms. You may experience difficulty in breathing. The same may be true of swallowing, chewing or talking. (That depends upon which muscles are involved.) You feel chills. You suffer headache. You have a distinct feeling of being sick. Your eyes become puffy. Your throat becomes sore. If you take your temperature, you are almost certain to find that you have considerable fever.

That is the acute attack of trichinosis. It usually lasts from one to two weeks. But you still have a long pull ahead of you. You are still likely to suffer a great deal of pain.

The second stage is marked by an increase in the white cells of the blood. There is a high fever.

This gives way after a time to the third stage. Then you suffer from anemia. There may be eruptions of the skin. You have to be unusually careful about pneumonia. For at that stage you are especially susceptible to that dangerous disease. Your temperature goes up and down in a rather crazy way.

If you survive these three stages, which you are likely to do, since trichinosis is not a particularly fatal disease, you still are not out of the woods. Not by a great deal. For convalescence is slow and painful. Unfortunately, there is little that your doctor or anyone else can do to speed it up. Indeed about all that can be done for you is to make you comfortable, keep your spirits up and inspire patience for the long pull back to health. Recovery is the physical manifestation of something that has occurred inside the body. Those parasites that have caused all that pain and those symptoms have been rendered relatively harmless by becoming encapsulated, or encysted. (In other words, they have been "bottled up.") Recovery from trichinosis has been compared to recovery from pulmonary tuberculosis, an entirely different kind of disease. For, when you recover from tuberculosis, the dangerous tubercle bacilli have been "bottled up" in the lungs. In both forms of illness, whether recovery is permanent or only temporary depends upon your success in keeping the enemy "bottled up" for good.

Trichinosis is much more prevalent than you probably have any idea. It is not a reportable disease. Moreover, it would be difficult, if not impossible, to report anything like all the cases actually occurring. For it is easily mistaken for other diseases and therefore difficult to diagnose. But some light has been thrown upon its prevalence. Just a short time ago, for instance, the Department of Health of New York City announced that "in the past several years hundreds of cases of trichinosis requiring hospitalization have been reported in the five boroughs." That public health agency added that those "hundreds of cases" requiring hospitalization represented only a small part of those actually occurring in the city. About the same time, Jerome Trichter, assistant health commissioner in charge of environmental sanitation, called attention to "recent studies" based, at least in part,

upon autopsies of people dying from many causes. Sixteen per cent of the bodies examined, he said, contained these parasites. That was slightly less than one out of every six. Mr. Trichter estimated that more than one percent of all pork meat was infected with the trichinae, or parasites.

As troublesome as trichinosis is after it becomes entrenched in the human system, it is not much trouble to prevent. Part of the responsibility for doing so lies with those who grow hogs for the market. Part of it lies with you and other pork consumers.

Thoroughly boiling all garbage to be fed to hogs erects a strong, effective barrier to human infestation. For heat, which kills so many enemies of animal and human health, destroys the parasites causing this disease. This same end could be reached too by feeding hogs something besides garbage.

That of course raises serious financial problems which the average farmer would have difficulty in solving. For garbage has extremely few uses. And using it as hog feed serves the double purpose of disposing of it in a satisfactory manner and providing an excellent hog feed—excellent, that is, except for trichinosis. Most hog-raisers will tell you that their costs would rise prohibitively if they were obliged to feed their hogs the year 'round on bought feeds. Their only recourse in such a case, they will insist, would be to increase the cost of the pork they sell. That would work a heavy hardship upon the average family, struggling to keep expenditures under income.

Boiling garbage would also involve a considerable expense. There would be the initial cost of the equipment needed. Then there would be the cost of the labor required to handle this equipment day after day. However, this cost is not believed to be prohibitive. Boiling is mandatory in some parts of the country.

Farmers may also take a hand in the fight against trichinosis in still another way. Extreme cold is also effective against those troublesome parasites. Authorities say hog meat stored for as long as twenty days at a temperature of about five degrees above zero, Fahrenheit, is safe from this point of view.

Now for your part in the anti-trichinosis fight. You can protect yourself by being

sure that all hog meat and pork products you eat have been thoroughly cooked. It is not necessary to trouble yourself with thermometers. There is a simple rule-of-thumb way to be safe. Just be sure that the hog meat you eat has been cooked enough to cause it to lose its pink color and turn grey. This change in color usually occurs at a temperature of around 163 degrees, Fahrenheit. But, as already pointed out, you do not need to remember or pay any attention to it. Just watch the color of the pork that is set before you.

If you are a housewife, you can easily keep the pork you eat and serve your family over a hot burner until that change in color occurs. If you have a job and eat at home, you can ask the cook—housewife or hired woman—to do so. Even if you eat in public eating places, you need feel no particular embarrassment about asking the waiter, when you give your order, to cook your pork chop extra well done. If you forget to do that or if, for some reason, the one he brings you still retains its original pinkish color, just ask him to take it back to the kitchen and have it cooked some more.

You may be interested to know that the New York City Department of Health prohibits waiters in that city from taking orders for any pork products to be cooked rare. It has also taken other vigorous steps to protect patrons of public eating places against this disease. Among the regulations it is now enforcing is one applying to ground meat for hamburgers which may be eaten rare. Such meat must be free from pork. If it isn't, then the restaurant owner must see that it is cooked sufficiently to kill the parasites. If a meat grinder has been used for grinding pork, it must be thoroughly cleaned and washed before it can be used for grinding hamburger meat. Smoking or tenderizing pork products does not necessarily kill the parasites. So New York City required that they be heated sufficiently to assure their death before they can be sold to patrons of eating places.

The same hog or shipment of pork that gives one person trichinosis can, and very likely does, give the disease to several others. An outbreak that attracted considerable attention and made newspaper headlines occurred in Potsdam, New York. Eleven people became sick after attending a

supper given by the Men's League of the Potsdam Presbyterian Church. Fortunately, none died. But, as someone remarked later, "all had good reason to know that they had been sick." Ten of the eleven had to stop working for awhile.

The outbreak was traced to pork sausage. (Sausage and pancakes, with plenty of syrup, had formed the main dish.) The sausage had been made from pork supplied by a local butcher. He, in turn, had purchased it from a man who held two jobs: he was a hog-raiser and also a garbage collector. As you may have guessed, he had been combining those two jobs quite profitably: the garbage collected became feed for his hogs.

Do not develop a trichinosis-phobia. Don't let your fear of this disease rob you of your enjoyment of pork and its products, which are delicious and good for you. Don't be afraid to eat them whenever you wish, at home or in public eating places. But do your part to protect yourself and others. If you cook pork, cook it thoroughly. If you eat pork that others cook, see that they cook it thoroughly. Then you will be playing it safe.

Courage in Medicine—With *courage* we shall carry on. We shall continue to improve our own knowledge of medicine and to provide ever improving medical service. We shall continue to resist the attempts of politically inspired bureaucrats to obtain control of the practice of medicine in this country. As individuals, but not as a political organization, we must learn the attitude of those who seek public office and then inform our patients and friends as to which candidates are most interested in the general welfare of all and those who are motivated only by political expediency and return to public office. We will protect the advancement of medical science from the depredations of unskilled cults and machinations of ignorant fanatics. We will cooperate with the authorities in the procurement and assignment of doctors of medicine for the care of our armed forces at home and abroad. With a depleted membership we will continue to care for those at home. And we will seek the knowledge we must have and create the organization necessary to cope with atomic disaster and the catastrophic emergencies of global war, if and when carried to our own fair land.

The role of medicine is an intimate part of the life of every individual in this country. It is an honorable profession, activated by the desire of its members to render the greatest possible service to the people of this country. Loyalty to the high calling of our profession and *courage* in adversity are the priceless ingredients in molding our aspirations.—*Gardner, Pennsylvania M. J., November '50.*

BUREAU OF LABORATORIES

Dewey M. Wells, Act. Director

SPECIMENS EXAMINED

OCTOBER 1950

Examinations for diphtheria bacilli and Vincent's	459
Agglutination tests (typhoid, Brill's and undulant fever)	939
Typhoid cultures (blood, feces and urine)	437
Examinations for malaria	263
Examinations for intestinal parasites	4,071
Serologic tests for syphilis (blood and spinal fluid)	27,431
Darkfield examinations	6
Examinations for gonococci	1,963
Examinations for tubercle bacilli	3,107
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	70
Water examinations	1,508
Milk and dairy products examinations	4,491
Miscellaneous	2,032
Total	46,771

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1950

	Sept.	Oct.	E. E.* Oct.
Typhoid and paratyphoid	11	6	7
Undulant fever	6	2	0
Meningitis	9	3	6
Scarlet fever	48	77	115
Whooping cough	106	75	52
Diphtheria	36	59	144
Tetanus	6	5	3
Tuberculosis	210	287	222
Tularemia	1	1	0
Amebic dysentery	8	3	1
Malaria	9	4	281
Influenza	46	38	78
Smallpox	0	0	0
Measles	7	13	11
Poliomyelitis	42	26	12
Encephalitis	1	0	1
Chickenpox	13	24	10
Typhus	25	8	32
Mumps	50	22	22
Cancer	418	326	237
Pellagra	0	3	3
Pneumonia	71	78	113
Syphilis	544	546	1507
Chancroid	16	10	27
Gonorrhea	395	349	599
Rabies—Human cases	0	0	0
Positive animal heads	18	14	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR AUGUST 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During August 1950			August Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	7619	**	**	29.3	29.8	26.6
Total stillbirths	190	**	**	24.3	27.3	26.0
Deaths, stillbirths excluded	2038	1190	848	7.8	8.2	7.3
Infant deaths:						
under one year	259	143	116	34.0	39.9	34.3
under one month	190	104	86	24.9	28.9	29.0
Cause of Death						
Tuberculosis, 001-019	69	36	33	26.6	27.5	30.7
Syphilis, 020-029	13	4	9	5.0	5.0	9.7
Dysentery, 045, 048	5	4	1	1.9	3.5	***
Diphtheria, 055	2	1	1	0.8	1.2	
Whooping cough, 056	5	1	4	1.9	0.4	0.4
Meningococcal infections, 057	1	1		0.4		0.4
Poliomyelitis, 080, 081	4	4		1.5	0.8	0.4
Measles, 085					1.2	
Typhus fever, 100-108	1	1		0.4		0.8
Malaria, 110-117	1		1	0.4	1.2	0.8
Malignant neoplasms, 140-200, 202, 203†	241	177	64	92.8	79.5	78.0
Diabetes mellitus, 260	22	11	11	8.5	6.2	11.3
Pellagra, 281	1	1		0.4	1.2	1.9
Vascular lesions of central nervous system, 330-334	215	112	103	82.8	75.2	73.4
Other diseases of nervous system, 300-318, 340-398	18	9	9	6.9	16.7	8.9
Rheumatic fever, 400- 402	5	3	2	1.9	1.2	
Diseases of the heart, 410-443	567	347	220	218.3	243.9	155.3
Diseases of the arteries, 450-456	16	9	7	6.2	8.9	6.6
Other diseases of the circulatory system, 444-447, 460-468	33	14	19	12.7	11.6	3.5
Influenza, 480-483	6	3	3	2.3	1.9	0.8
Pneumonia, 490-493	68	33	35	26.2	20.2	22.1
Bronchitis, 500-502	1	1		0.4	0.4	1.9
Appendicitis, 550-553	7	4	3	2.7	3.9	1.9
Intestinal obstruction and hernia, 560, 561, 570	16	9	7	6.2	8.1	3.1
Gastro-enteritis and colitis (under 2), 571.0, 764	11	5	6	4.2	14.7	8.5
Cirrhosis of liver, 581	8	6	2	3.1	5.4	3.9
Diseases of pregnancy and childbirth, 640- 689	14	5	9	17.9	16.4	22.7
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 681, 682, 684					3.8	5.8
Congenital malforma- tions, 750-759	24	14	10	3.2	3.9	4.5
Accidental deaths, total, 800-962	183	127	56	69.3	60.1	61.3
Motor vehicle acci- dents, 810-835, 960	67	56	11	25.8	24.0	27.2
All other defined causes	378	222	156	146.7	168.7	173.5
Ill-defined and un- known causes, 780, 793, 795	103	26	77	39.7	39.6	54.0

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the August report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

Bowel Intussusception Pain Syndrome—A type of case that has been mildly unsatisfactory to the proctologist is the infant, usually under one year of age, brought in by his parents with a history of crying with bitter pain at the time of bowel action, or perhaps merely crying with pain as though trying to have a bowel action without success. The following are excerpts from typical histories in cases showing more than normal rectosigmoid descent: a two-months-old baby girl has had colicky pains preceding the passage of every stool. An eleven-months-old boy screams with pain at bowel movements since two to three weeks of age. A four-months-old girl almost goes into spasms when she has bowel movements; yet the adult diameter proctoscope was inserted through the anus without her crying.

A five-months-old boy screams and strains at the time of defecation which is prolonged. The parents had been told that he had "fissures" yet none could be seen; crying does not start until after insertion through the anus, and then abnormal descent of the rectosigmoid downward can be felt with the examining finger as well as seen through the proctoscope. The practice has been rather general to feel that there is an anal fissure present; many times, however, I have not been able to demonstrate a fissure and the forefinger rectal digital examination does not provoke a properly timed vocal objection, nor does it provoke the resistance that occurs in the manipulation of a fissured anus. An adult diameter proctoscope may be inserted all the way through the anus and the child cries only after it progresses higher. The history often is that he cries out before the sphincter is stretched open at defecation.

In recent years my proctoscopic examinations have noted an increasing number of these in whom more than the usual protrusion of rectosigmoid into the proctoscope and into the upper rectum was present. Varying degrees of rectosigmoid prolapse or procidentia were present. One seven-weeks-old infant with the above characteristic history several times had a bowel mass visible at the anus that proved to be the tip of an intussusceptum cone. After several months of the management that we advise, or perhaps it was after several months of further growth and development, this prolapsing was not seen again and his complaint was relieved.

Nearly all the cases have been under one year of age and they are perhaps a little more frequent in males. They usually have the appearance of being in a good state of nutrition despite their bouts of pain. The report has been negative in those whom we have sent for barium enema colon x-ray. The impression is that they tend to outgrow the complaint.

It goes without saying that they should be under the pediatrician's care. I have advised that the infant be inverted, hips up and head down, several times temporarily during the cramping spells and that tepid water enemata be run into the rectum in the inverted position to obtain the aid of gravity in the correction of temporary intussusception if the complaint is persistent.—Murdoch, South. M. J., Dec. '50.

BOOK ABSTRACTS AND REVIEWS

A Correction—In the November 1950 Journal the price of Volume IV of the Textbook of X-Ray Diagnosis edited by Shanks and Kerley was quoted as \$10.00. It should have been \$15.00.

A Text-Book of X-Ray Diagnosis. Edited by S. Cochrane Shanks, M. D., Director of X-Ray Diagnostic Department, University College Hospital, London; and Peter Kerley, M. D., Director of X-Ray Department, Westminster Hospital. Volume III on the Abdomen. Cloth. Price, \$18.00. Pp. 830, with 694 illustrations. Philadelphia: W. B. Saunders Company, 1950.

This is Volume III of X-Ray Diagnosis by the "British Authors." Volume IV on bones and joints has been previously reviewed. Two more volumes are forthcoming, Volume I on Head and Neck and Volume II on the Cardiovascular and Respiratory Systems. The complete set of four volumes costs \$55.00.

This set is the second edition. The first was published in 1938. Although frequently reprinted, this is the first complete revision. Shank's volumes of X-Ray Diagnosis are a standard text for reference and study. It is authoritative and probably every roentgenologist is familiar with this excellent work. It is very well written and it successfully describes the roentgen signs and criteria of normal and pathologic conditions.

The present Volume III covers the alimentary tract, obstetric, and gynecologic radiology and, lastly, the roentgenology of the urinary tract.

There is an excellent chapter discussing esophageal lesions in infants and children. Congenital and acquired diseases of the esophagus and their differential diagnosis are discussed.

The technique of examination of a "G. I. Series" is followed by a very comprehensive discussion of the stomach in health and disease. The diagnosis of a gastric ulcer requires a very complete understanding of the mucosal pattern of the stomach and an appreciation of how to demonstrate a lesion by direct and indirect signs. The benign and malignant tumors of the stomach and their x-ray recognition are discussed reliably. The subject of duodenal ulcers is very complete and accompanied by explanatory x-ray illustrations.

There is a chapter discussing the stomach and duodenum after operation. This correlates the surgery with the x-ray demonstration of function following gastro-enterostomy.

The anatomy of diaphragmatic hernias and demonstration of abdominal contents abnormally entering through the hiatus and foramina of the diaphragm to become lodged in the thoracic cavity are discussed. Numerous x-ray reproductions depict these situations.

Anatomic variations of the colon due to faulty embryologic development, such as situs inversus and faulty rotation, are demonstrated. The new concept (1948) of the pathogenesis of Hirschsprung's disease, due to absence of ganglion cells in the distal narrow normal segment of the colon, is mentioned, showing that this edition is right up to date. Also included is obstruction due to intussusception, volvulus, malignancy and inflammatory diseases, such as diverticulitis, tuberculosis, and ulcerative colitis.

The recent importance of the use of radiology in obstetrics and gynecology is stressed by the fact that the present second edition contains a section of 175 pages devoted to this subject, in contrast to 82 pages in the first edition. The relationship of the fetus to the pelvis and the classification of the types of pelves follows the work of Caldwell and Malloy. There is an excellent discussion of the methods and interpretation of pelvimetry. The reviewer is gratified that the method of Ball is favored. This method provides the most information of the relation of the presenting fetus to the inlet, mid-pelvis, and outlet of the pelvis. It is reasonably accurate and reliable. The other methods such as Thoms' grid method, stereoscopic method of Malloy, and the rule method of Colcher are discussed completely. It is shown how this information can be applied to give a prognosis of an obstetric case, and to investigate dystocia.

Hysterosalpingography is evaluated. Malformations, malpositions and tumors of the uterus, extra-uterine tumors, diseases of the Fallopian tubes, and study by x-ray of sterility are demonstrated by drawings and roentgenograms.

The final section in the volume is devoted to the urinary tract. Normal excretory and retrograde pyelography appearances are followed by descriptions of developmental anomalies, infections, tumors, and calculi. The calcifications in the pelvis which may be confused with urinary and genital calcifications are stressed.

This textbook of x-ray diagnosis is written by British authors. But full recognition is given to American contributions. The text and bibliography are complete and up to date. The illustrations clearly demonstrate the roentgen diagnosis for which it is intended. Practically all common conditions are shown. The book does not intend to correlate clinical data, x-ray findings and therapy. Its purpose is to present the roentgen criteria for those diseases which are diagnosed by x-ray and to show how they can be differentially diagnosed. There are few tables, few statistics, and few controversial theories. This book is a "must" for the radiologist. It is an excellent edition.

H. J. Goldstein, M. D.

Physician to the World. The Life of General William C. Gorgas. By John M. Gibson, Director, Division of Public Health Education, Alabama State Department of Health, Montgomery. Cloth. Price, \$4.50. Pp. 315. Durham, N. C.: Duke University Press, 1950.

The year 1950 produced two books of particular interest to Alabamians: *Woman's Surgeon*, the Life Story of J. Marion Sims, by Dr. Seale Harris of Birmingham; and *Physician to the World*, the Life of General William C. Gorgas, by John M. Gibson of Montgomery. Dr. Brannon Hubbard, in his review of the Sims story (J. M. A. Alabama, November 1950), said: "Dr. Harris has written a biography of Marion Sims that not only is remarkable for the many interesting details of Dr. Sims' life but is written in such a delightful style that the reader becomes more and more engrossed in the story as the book progresses." Equally as much may be said of Gibson's life of General Gorgas, that is so entrancing that this reviewer found it difficult to lay the book aside when bedtime came.

There was a reason, for here was the story of a ragged, barefoot, Southern boy who, grown to manhood within the pages of the book, and "having done for the world one of the greatest things that an American mind had ever done," received at his death, in London on his nation's birthday in 1920, honors rarely, if ever before, accorded any man. Said the King of England: "If General Gorgas is too ill to come to the palace to see me, I shall go to the hospital to see him," and that he did. But those stirring tributes were merely an extension and accentuation of the many that came to this modest Alabamian in life. Not without reason did officials of the Smithsonian Institution call him "the most internationally honored American medical man who ever lived."

Physician to the World is the life story of that man. It is the narrative of the winning of those honors, often at the cost of bitter disappointment, burning frustration and direly threatened failure. It is the chronicle of a great man's determination in the face of ridicule; of good humor and charity to those who showed neither good humor nor charity. It is an evaluation of a career that should be an inspiration to any American school child, the pride of any Alabamian.

That story began with the romance and marriage of a Yankee army officer and the daughter of an Alabama governor. It sped along through the crowded years comprising the next half-century or longer. Episode followed episode like acts and scenes in a well staged play. The first was the birth of that happy couple's first child, capably handled by an Alabama doctor who held to the scorned theory that the mosquito had much to do with the prevalence of certain diseases. There was a troubled childhood in the heart of the Confederacy. There was a determination to become a soldier. There was disappointment over not getting to West Point. There was scholastic careers at the University of the South and Bellevue; the rugged life of an army doctor; romance

with and marriage to one of his patients; Gorgas's firm conviction that mosquitoes had nothing to do with yellow fever or any other disease; his change of mind after observing the work of the Reed Board in Cuba; his conquest of both malaria and yellow fever in Havana; his selection for the tougher and more important job of conquering disease at Panama and making it possible to construct the canal; the tortured, harassed months and years he spent making good on that job, against obstacles that would have driven many men insane; his triumph in spite of red tape, indifference, jealous rivals, sneers, delays and everything else; his magnificent success in keeping American fighting men in better health during World War I than the fighting men of this or any other nation had ever before known in wartime; his work with the Rockefeller Foundation to drive the snakes of environmental disease from their ancient pits in South and Central America; and the last long voyage that ended in a London hospital.

No life story of a man of Gorgas's stature could be limited to pure biography. Other and smaller streams frequently flowed into the main stream of this man's life. So *Physician to the World*, like any book of its kind, is a history of an era. Gorgas is always the chief actor, the resplendent figure under the spotlight. But there are many other characters in the Gorgas drama, playing important and significant roles. A number of them were, or still are, Alabamians: Dr. Seale Harris, Dr. Robert E. Noble, Dr. Josiah Nott and Dr. J. H. Johnson, among others. There was the episode in which the American Medical Association went to bat for Gorgas at a time when he—and the sanitary program upon which hung the completion of the Panama Canal—sorely needed a friend. There was Gorgas's bold criticism of his official superiors, when it would have been vastly more pleasant to play the "speak no evil" monkey, in the face of unbuilt hospitals and shameful overcrowding of fighting men during World War I. There was the fight for higher military rank for outstanding physicians and surgeons. There were many other occasions when that biographical spotlight swung to important but little known episodes in American and world history.

Mr. Gibson received from Miss Mary Gorgas and other members of the Gorgas family a great amount of unpublished material. Personal letters throwing new light upon General Gorgas's private life and deepest convictions were turned over to him for use as he saw fit. The Gorgas journals, kept for the enjoyment of the family, were liberally extracted. Some of those who knew him best told about minor episodes that throw a bright light on the man and the famed health-bringer.

Gorgas was too much a world figure to belong to one people or one state. But Alabamians have a particular claim upon him. It is hoped that *Physician to the World* will shame those of a post-Gorgas generation who have tended to slight him in favor of more spectacular but far less solid heroes. It is also hoped that all of us will

be prouder of our state because of our greater pride in him. He was "the most internationally honored American medical man who ever lived," and the reasons will be evident to all who read Mr. Gibson's book.

Douglas L. Cannon, M. D.

Pathologic Physiology: Mechanisms of Disease. Edited by William A. Sodeman, M. D., F. A. C. P., the Wm. Henderson Professor of the Prevention of Tropical and Semi-Tropical Diseases, Tulane University of Louisiana School of Medicine; Senior Visiting Physician, Charity Hospital of Louisiana; Consultant in Medicine, U. S. Marine Hospital at New Orleans. Cloth. Price, \$11.50. Pp. 808, with 146 figures and 30 tables. Philadelphia and London: W. B. Saunders Company, 1950.

This book deals with the disturbed physiology of disease and with the mechanisms of abnormal function. It therefore differs from the usual textbooks in the field of internal medicine which devote much space to discussions of etiology, pathology and treatment. Symptoms and signs are explained as they appear in the developing disease, and the mechanisms and causes of their appearance are clarified.

The material in this book is the collaborative effort of twenty-five different authors. Each contributes a monograph covering his specialty. Most phases of abnormal physiology are well handled by the contributors, who are leading clinicians, research workers, and teachers from all parts of the country.

About one quarter of the book is devoted to the cardiovascular system. The hemodynamics of the heart and blood vessels are well discussed, and many illustrations and diagrams are used to simplify a complicated subject. The mechanics of heart action in congenital and acquired disease is presented in a comprehensive manner. A brief explanation is given of the physiology of the electrocardiogram.

The section which deals with the digestive tract is excellent. Dr. W. L. Palmer and others present the symptomatology of malfunction of digestion in a most delightful manner because of simplicity. The interplays produced by abnormalities in the gastrointestinal tract, bile passages, and pancreas are well brought out.

The section on blood and the hematopoietic system is ably handled by such eminent authorities as Dr. W. B. Castle and Dr. C. A. Doan. Other sections are briefer, and cover the urinary tract, nutrition, allergy, etc. The monographs, in general, cover the material from the practical viewpoint of the clinician.

This volume is not intended to replace standard textbooks but rather to supplement them. It is an invaluable addition to the library of every student or practitioner of internal medicine.

Joseph Weinrib, M. D.

The Mask of Sanity. By Hervey Cleckley, M. D., Professor of Psychiatry and Neurology, University of Georgia School of Medicine, Augusta. Cloth. Price, \$6.50. Pp. 549. St. Louis: The C. V. Mosby Company, 1950.

The Mask of Sanity concerns itself with the psychopathic personality—one of the few bulwarks, if not the last one, to resist completely the onslaught of psychiatric progress. While we may have tried vainly to deny his existence by relegating him to the peripheries of psychiatric thought much as though he were an idiot child to be hidden away in an attic bedroom, he has grown so large and so noisy that we must recognize him for the problem he is, despite our embarrassment. The second edition of this book has been thoroughly reorganized and measurably improved. The material has been extended by the author's broader clinical experience, and the formulations reflect his thorough digestion of the very considerable literature that has accumulated on this topic in the interval between editions.

The first section of the book examines the problem in general terms and is followed by a section presenting an interesting variety of fairly classical examples of the psychopath. The third reviews "the conceptual confusion" that exists in this field and compares and differentiates the psychopath from other nosological entities.

It is the fourth section, however, that proves to be the most provocative. The author, influenced by Korzybski, proposes that the psychopath suffers from a "semantic disorder," one in which the true emotional meaningfulness of his asocial behavior is lost in a sort of synaptic defect in the interval between thought and act. While he attempts to explain many of the symptoms in terms of this theory, he fails to adhere to his frame of reference on some occasions, lapsing into pure description rather than explanation. The fifth and final section is labeled with the rhetorical question "what can be done?" The author is modest in his admission that he does not have the answer and recommends rather obvious revisions of attitudes—psychiatric, legal, and civil.

Surfeited with the superficial, the evasive and the pusillanimous attacks on this subject, this reviewer finds the book a gratifying psychiatric and literary experience. The thinking is orderly, incisive and well oriented to dynamics. The style has the cleanly starched stiffness of a victorian petticoat, rustling occasionally with good humor. The book should be included in any comprehensive psychiatric library.

Philip S. Bazar, M. D.

Researches in Binocular Vision. By Kenneth N. Ogle, Ph. D., Section on Biophysics and Biophysical Research; Research Consultant in the Section on Ophthalmology, Mayo Foundation and Mayo Clinic, Rochester, Minnesota. Cloth. Price, \$7.50. Pp. 345, with 182 figures and 26 tables. Philadelphia and London: W. B. Saunders Company, 1950.

The greater part of the subject matter of this book is based upon the research in binocular vision conducted at the Dartmouth Eye Institute at Hanover, New Hampshire. An attempt is made to summarize and integrate the significant parts of that work into one general body of knowledge of the visual processes.

Presented in this volume are nonclinical aspects of the researches in binocular vision, though

clinical data from the Dartmouth Eye Institute are often used for supporting evidence. A resume and continual reference is made to the literature published on this subject. In this text an attempt is made to organize and integrate the particular researches in binocular vision. The book was written and edited in Rochester, Minnesota at Mayo's, where Dr. Ogle is now associated in the Section of Biophysics and Biophysical Research.

The monograph is well illustrated, an excellently bound and presented book. It is only for consumption by ophthalmologists, physiologic optical students, and those in allied fields. It is most technical and probably is best as a reference text especially for those interested in research in binocular vision.

Karl Benkwith, M. D.

Sexual Fear. By Edwin W. Hirsch, B. S., M. D., Attending Urologist, Englewood Hospital, Chicago, Ill., former Associate in Urology, College of Medicine, University of Illinois; Member A. M. A., American Urological Society. Cloth. Price, \$3.00. Pp. 295. Garden City, New York: Garden City Publishing Co., Inc., 1950.

The author of this book is a Urologist whose capacity to raise his thinking cephalad to the level of the prostate is so limited that the fusion of the urologic and psychiatric images of this problem is never effected, and the result is a rather inadequate book which fails to fulfill the promise of the dust jacket which ambitiously states that it will tell "simply and effectively how to overcome the sexual fear that causes frigidity, impotence and sex neurosis."

The first half of the book is devoted to a review of the sexual mores of the Babylonian, Egyptian, Hebrew, Greek, Roman and Christian Cultures. The author fails to draw any significant lesson from this disproportionate emphasis on the history of dead civilizations, and the needlessly lurid and detailed descriptions of sexual excesses and venereal plagues expose him to the suspicion of cheap sensationalism.

The second half of the book focuses on the sources of sexual fear, the sexual neuroses and treatment of sexual fear by "psychomatics." The latter is a term coined by the author, (obviously of base metal), and refers "not only to the mind, body and environment of man but also to the influences outside of the self as well as within the self by which man is subject to change." There are other words of fewer syllables and greater expressiveness and durability that have long been used to describe such tripe. Great though the need is for sound information, this book fails to provide it in a digestible form.

Philip S. Bazar, M. D.

Surgery of the Eye—Injuries. By Alston Calahan, B. A., M. S. (Ophth.), M. D., F. A. C. S., Professor of Ophthalmology, Medical College of Alabama; Director of Thigpen-Cater Eye Hospital, Birmingham, Alabama; Formerly Chief, Eye Section, Northington General Hospital, Tuscaloosa, Alabama. First edition. Cloth. Price,

\$11.50. Pp. 240, with 367 illustrations (20 in full color). Charles C. Thomas, Publisher, Springfield, Illinois, U. S. A., 1950. Published simultaneously in the British Commonwealth of Nations by Blackwell Scientific Publications, Limited, Oxford, England. Published simultaneously in Canada by the Ryerson Press, Toronto.

This work is the result of studies made in observation of several thousand cases in an army ophthalmic center, in addition to those civilian and industrial injuries encountered over a five-year period at the Thigpen-Cater Eye Hospital in Birmingham. The procedures described are those that give the best results in the author's hands. It is specifically stated that the work is not intended to cover all phases of ophthalmic surgery. A comparison of a number of photographs and drawings before and after operations helps the reader to give proper credit to the procedure under consideration.

There are sixteen chapters, with an extensive bibliography for each chapter. The first chapter deals with important and practical details of the finding and removal of foreign bodies. The course of treatment of lacerating and penetrating wounds of the eye is discussed in a most thorough manner; and the advantages of direct suture for closure, or closure with conjunctival flap, are considered—all adequately illustrated. There are also remarks concerning symblepharon repair and the surgical management of corneal opacities. The indications for corneal transplantation are discussed.

In the second chapter excellent details regarding the management of injuries of the iris, ciliary body, and lens are presented. This information serves a common need, for it involves the type of case (with its attendant problems) frequently encountered in the average ophthalmic practice. It will also serve as an excellent guide for those physicians in general practice who, of necessity, have the responsibility of initial treatment, during which time frequently irreparable damage can be prevented.

Other chapters are on various types of grafts, major reconstruction of lids, traumatic ptosis, reconstruction of the socket, and fractures of the orbit with reconstruction of the bony orbit. There are many valuable suggestions regarding these subjects, but some of them are major procedures that are not likely to be encountered in the average practice; however, many of the descriptions of the surgical steps involved, as described in the text and correlated with the respective photographs and drawings, afford a remarkably clear concept of the technique involved.

The last chapter is on ophthalmopexies and ocular prostheses, and finally an appendix is devoted to a detailed description of the preparation of the patient, instruments, surgeons hands, etc.

A great deal of constructive thought has been applied to the preparation of this work, and an actual need is fulfilled in the field of ophthalmic surgery. We may take justifiable pride in the work of one of our native sons.

D. S. Hagood, M. D.

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TREATMENT OF THE PYOGENIC DERMATOSES

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Birmingham, Alabama

The pyogenic dermatoses comprise a considerable segment of present-day dermatologic practice, and the management of this group becomes decidedly discouraging at times. The more common members include impetigo contagiosa, ecthyma, erysipelas, folliculitis, sycosis vulgaris, furunculosis, carbunculosis, and hidradenitis suppurativa. It would appear that the treatment of these infections should be a relatively simple matter. The causative organism can usually be cultured and identified and there are now available numerous therapeutic agents which, in most instances, will destroy the infectious agent *in vitro*. In spite of recent therapeutic advances there still does not exist a completely satisfactory non-sensitizing method of therapy. It was pointed out that in the U. S. Army in World War II cutaneous pyogenic infections were a far more important cause of chronic disabling eruptions than were superficial fungous infections.¹ Since these patients are commonly seen, and since many of them do present an intriguing therapeutic problem, it would appear worth while to review briefly the therapeutics of pyogenic bacterial infections.

BACTERIOLOGIC CONSIDERATIONS

The two pathogenic organisms most commonly cultured from cutaneous pyodermatous lesions are the hemolytic *Staphylococcus aureus* and the beta hemolytic streptococcus.¹ Disease is probably seldom attributable to a single bacterial cause but rather

must be assigned to a multiplicity of causes. Attempts to reproduce the lesions of impetigo in uninfected controls with cultures of pathogenic staphylococci and streptococci have been only occasionally successful.² Certainly impetigo is not invariably produced if the skin of the recipient is unbroken.

There may be present a remarkable variety of bacteria upon the skin even in the perfectly normal patient. In order to interpret properly the significance of bacterial cultures from cutaneous lesions it is helpful to possess an understanding of the bacterial flora of normal skin. Price³ has divided these bacteria into two groups, namely: the resident flora and the transient flora. It is of interest that the resident group of organisms is removed only with difficulty from the skin, whereas the transient group can ordinarily be destroyed easily. Should a pathogenic bacterium prove to be one of the resident variety it may play a considerable part in the recalcitrant nature of certain infections. The pathogenic staphylococcus is not infrequently cultured from normal skin, whereas the pathogenic streptococcus is uncommonly recovered. It has been suggested that these organisms probably come from the individual's own

terial Infections of the Skin, J. A. M. A. 132: 692, 1946.

2. Bigger, J. W., and Hodgson, G. A.: Impetigo Contagiosa: Its Cause and Treatment, Lancet 1: 544, 1943.

3. Price, P. B.: The Bacteriology of the Normal Skin: A New Quantitative Test Applied to a Study of the Bacterial Flora and the Disinfectant Action of Mechanical Cleansing, J. Infect. Dis. 63: 301, 1938.

Read before the Association in annual session, Birmingham, April 20, 1950.

From the Department of Dermatology and Syphilology, Medical College of Alabama.

1. Pillsbury, D. M.: The Management of Bac-

nasopharynx. Investigators⁴ have shown that from 32 to 90 per cent of normal individuals occasionally have pathogenic staphylococci upon their nasal mucous membranes and that they are more often cultured from that site than from the throat. Organisms harbored in the nose are more likely to contaminate the environment than those inhabiting the throat. The *Staphylococcus pyogenes* has been called a "typical opportunist" awaiting in the nose or cutaneous fold for an opportunity to strike.⁵

The pathogenic streptococcus has been cultured from the throats of 6 to 13 per cent of the normal patients tested. It is more often found in the throat than upon the nasal mucosa.

It seems rather amazing that many of these organisms can exist indefinitely upon the skin without producing pathologic lesions. Some of these organisms are capable of actual or potential pathogenicity, yet for the most part they exist peacefully along with their human host. The skin undoubtedly has a magnificent ability to preserve its normal structure and function without being damaged by ever-present viruses. Burtenshaw⁶ accredits these disinfecting properties of the skin surface to: (1) the processes of desquamation and certain physico-chemical properties of the epidermis, (2) desiccation, (3) acidity of the skin or the "acid mantle," (4) the presence of fatty acids, and (5) the action of certain ill-defined bactericidal agents.

The skin over most of the body surface normally has a pH of about 5.0 except in those areas containing the apocrine sweat glands.⁴ It has been said that the degree of acidity ordinarily found upon the skin surface is sufficient to destroy several of the common pathogens, including the *Streptococcus pyogenes*. The acidity of the cutaneous surface therefore is an important factor in autogenous disinfection. It is probable that the sweat is responsible for the acidity of the skin areas upon which it is secreted

and it is likely that the sebum contributes to this acidity.

EFFECTIVE THERAPEUTIC AGENTS

Penicillin: Penicillin is undoubtedly the most widely used and effective agent in the treatment of the pyodermata. More and more, however, with the passage of time investigators are pointing out additional complicating factors associated with the therapeutic use of penicillin.

Barber and Rozwadowska - Dowzenko⁷ have reported the fact that the penicillin-resistant strains appear to be increasing. In 1946, 14 of 100 staphylococcal infections were found to be penicillin-resistant. In the same hospital in 1947, 38 of 100 patients and in 1948, 59 of 100 patients were found to be penicillin-resistant. It is suggested that the increasing number of resistant organisms is due to elimination of competing penicillin-sensitive strains with the subsequent survival of those naturally resistant.

It has been shown that more than 15 per cent of all patients treated topically with penicillin developed sensitivities.¹ It appears therefore that penicillin should not be used routinely as a topical agent in treating pyodermias. Other effective agents are available and some of these are less sensitizing and would not interfere later with the parenteral administration of a drug which might be urgently required.

Only one-fifth to one-third of orally administered penicillin is absorbed and becomes available for therapeutic action. Nevertheless, in children and ambulatory patients the use of tablets in certain less severe cases is convenient, practical, and effective.

Parenteral injections of penicillin are equal or superior to the use of topical penicillin in the treatment of superficial cutaneous infections and are productive of fewer reactions.

It is of considerable interest that one of the newer preparations contains two per cent aluminum monostearate and actually produces a discernible blood level for 72 hours or more. The numerous advantages of a preparation of this type are obvious.

7. Barber, M., and Rozwadowska-Dowzenko, M.: Infection by Penicillin-Resistant Staphylococci, *Lancet* 2: 641, 1948.

4. MacKenna, R. M. B.: *Modern Trends in Dermatology*, Paul B. Hoeber, Inc., New York, p. 140, 1948.

5. Smith, T.: *Parasitism and Disease*, Princeton, Louis Clark Vanuxem Foundation, 1934.

6. Burtenshaw, J. M. L.: *Self-Disinfection of the Skin: A Short Review and Some Original Observations*, *Brit. M. Bull.* 3: 161, 1945.

The Sulfa Drugs: It is unfortunate that a great number of people today have sulfathiazole ointment in their medicine cabinets and use it frequently. It should be emphasized that the reports of Pillsbury¹ and other investigators have shown that the use of this drug locally upon the skin for periods longer than five days at a time often produces sensitization.

The introduction of penicillin therapy greatly reduced the need for sulfonamides. Sulzberger and Baer⁸ have called attention to the fact that there are only two common diseases in dermatology and syphilology which are susceptible to sulfonamides but not to penicillin, viz: chancroid and lymphopathia venereum.

In certain instances systemic administration of sulfonamides may be indicated: (1) if the causative organism is thought to be sulfa-sensitive, (2) if practical matters designate sulfonamides rather than another drug, or (3) if the use of sulfonamides may produce a desired synergistic effect. In penicillin-sensitive patients the need for the administration of sulfonamides may also occur.

Tyrothricin: Tyrothricin is not as great a sensitizer as penicillin and is more stable.⁸ It is also more rapidly acting and has a wider antibacterial spectrum. It is well tolerated locally, and when used as a paint or compress has been found to be effective in the treatment of the superficial pyogenic infections. It may be used as a wet dressing in a 1:5000 concentration prepared by adding 1 cc. of the 2 per cent solution to 100 cc. of distilled water. Its local use has also been recommended in the form of Intra-derm Tyrothricin. This preparation possesses increased penetrative ability due to the nature of its vehicle. The liquid preparations have been more effective than tyrothricin creme and ointment.

Bacitracin: Bacitracin has recently been recommended for use in infections caused by Gram-positive aerobic streptococci and staphylococci and anaerobic streptococci.

Part of its potential value lies in its use in treating those patients whose infections have been found to be penicillin-resistant.

It has been advocated topically for the superficial pyodermas with a concentration of 1000 units present in each gram of ointment.⁹ It will accomplish in approximately eight days in the treatment of impetigo what penicillin and sulfonamide ointment will do in six days and has a lower incidence of allergic reactions. Oxidizing agents such as hydrogen peroxide or potassium permanganate inactivate Bacitracin and should not be used concomitantly. Because of occasional nephrotoxic manifestations the drug at present is largely limited to topical use.¹⁰

Boric Acid Ointment: Robinson and Robinson¹¹ reported the results of the treatment of 171 patients with various preparations including penicillin, tyrothricin, furacin, ammoniated mercury, and boric acid ointment. They found that all gave satisfactory results varying only in the time required for healing. However, contact dermatitis occurred with all of the drugs used except boric acid ointment. It is an old favorite and can be recommended.

Ammoniated Mercury: Ammoniated mercury ointment is another established effective agent. It is seldom necessary to use this preparation with a strength stronger than 5 per cent. Where a greasy preparation is not desirable it has been found that by placing 3 to 5 per cent of the drug in colloidal aluminum hydroxide or calamine lotion and using as a shake lotion that it makes an effective preparation. Either will leave a dry powdery residue where applied. This drug is a satisfactory antiseptic but may produce sensitization dermatitis. Patients should be questioned regarding previous sensitivities to mercury before it is prescribed.

Aureomycin: Hollander and Hardy¹² found a 3 per cent aureomycin hydrochloride ointment effective in the local

9. Derzavis, J. L.; Rice, J. S., and Leland, L. S.: Topical Bacitracin Therapy of Pyogenic Dermatoses, J. A. M. A. 141: 191, 1949.

10. Meleney, F. L., and Johnson, B. A.: Bacitracin, Am. J. Med. 7: 794, 1949.

11. Robinson, H. M., and Robinson, H. M., Jr.: The Comparative Clinical Values of Some New Drugs in the Pyodermas, South. M. J. 40: 409, 1947.

12. Hollander, L., and Hardy, S. M.: The Use of Aureomycin Ointment in Dermatology, Amer. Practitioner and Digest of Treatment 1: 54, 1950.

8. Sulzberger, M. B., and Baer, R. L.: The 1946 Year Book of Dermatology and Syphilology, The Year Book Publishers, Inc., Chicago, p. 13, 1947.

treatment of the pyodermata. A number of their patients, however, developed sensitivities to the preparation.

The oral use of aureomycin has also been reported to be effective in the treatment of staphylococcal and streptococcal infections.^{13, 14}

Furacin: Furacin may be effective when applied in certain pyogenic infections, yet the relative large number of reactions which occur with its use, particularly under occlusive dressings, has prevented its use from becoming more widespread.

Paints: The combination of antiseptic paints plus wet compresses or ointment is an effective and useful one. One per cent gentian violet in 10 per cent or 70 per cent alcohol applied locally once or twice daily is of value. Although the objectionable staining which accompanies its use is undesirable, there are certain conditions where its antiseptic, desiccating, and additional qualities are helpful. Similarly, Castellani paint, tincture of zephiran, brilliant green, and other paints are often of value.

Wet Compresses: An important procedure in the management of cutaneous infections is debridement. One of the most satisfactory means by which infected, crusted lesions can be debrided is by the use of thick, wet compresses. If these compresses are changed at least every two hours, the crusts and debris covering the lesions are loosened and can be removed more easily. A weeping and infected surface is almost always best treated by means of wet dressings.

One to twenty Burow's solution, 1:4000 potassium permanganate solution, and 0.1 per cent Dakin's solution applied as wet compresses are three mild antiseptic solutions which are effective against the pyodermata. The compress should be covered by a water-proof substance so that it will remain moist and reasonably warm. In this way the bed and other items touched by the patient will not become uncomfortably wet.

Quinolone compound ointment, Vioform Creme and Ointment, Sterosan, glycerite of hydrogen peroxide, streptomycin and chloromycetin¹⁵ are other preparations reputed to be of value in the treatment of the pyodermata.

General Measures in Chronic Recalcitrant Cases: Certain general measures may prove necessary in chronic recalcitrant cases. The possibility of an underlying diabetes mellitus or a chronic infectious focus should not be overlooked. Predisposing factors should be searched for by careful history, complete physical examination, and adequate laboratory investigation.

In vitro studies of the cultured organism set up against various medicinal agents may be helpful in deciding upon a more effective plan of treatment.

If the patient has not responded well, bed rest should be required. At times this may mean the difference between treatment failure and success.

An adequate nutritious diet with elimination of iodides, bromides, chocolate and excessive carbohydrates may be indicated. With pyogenic infections, vitamin determinations for A and C are occasionally significantly low, indicating that in some instances their administration might be advisable.¹⁶

Ultraviolet light applied generally as well as locally may be effectively added in an individual having recurrent bouts of folliculitis, impetigo, or furunculosis.

X-ray therapy may be a useful adjunct. If used early in the treatment of furuncles and carbuncles, it will prove helpful in most instances. The duration of the lesion is shortened and local discomfort is reduced.

Use of Vaccines: The mere destruction of the organisms in cases of furunculosis and sycosis vulgaris will not necessarily produce a permanent cure since the follicles most often are contaminated again sooner or later. Staphylococci act as pathogenic agents both by sensitization and through

13. Collins, H. S.: The Clinical Uses of Aureomycin, *Bull. New England M. Center* 11: 145, 1949.

14. Peterson, N. V., and Hadley, R. B.: Aureomycin. Its Use in Chronic and Acute Infections, Preliminary Report, *Eye, Ear, Nose and Throat Monthly* 28: 422, 1949.

15. Neter, E.: The Use and Action of the Newer Antibiotics—Aureomycin, Chloromycetin and Bacitracin, *N. Y. State J. Med.* 50: 79, 1950.

16. Callaway, J. L.; Milan, D. F., and Noojin, R. O.: Nutritional Survey of 354 Dermatologic Patients, *Arch. Dermat. and Syph.* 51: 266, 1945.

elaboration of toxins. Thus, in some instances, the combined use of staphylococcus toxoid and staphylococcus vaccines may be indicated. A number of competent observers have claimed good results with the use of vaccines.

CLASSIFICATION

For the purpose of discussing treatment it is convenient to divide the pyodermata into the following groups:

- I. *The superficial pyodermata*
 - A. Primary, acute group
 1. Impetigo
 2. Ecthyma
 3. Infectious eczematoid dermatitis
 4. Superficial folliculitis
 5. Erysipelas
 - B. The secondary superficial pyodermata (acute or chronic) may follow:
 1. Dermatophytosis
 2. Eczema
 3. Seborrheic dermatitis
 4. Dermatitis hypostatica
 5. Other primary dermatoses
- II. *The deep pyodermata*
 1. Sycosis vulgaris
 2. Folliculitis, furunculosis
 3. Carbunculosiis
 4. Hidradenitis suppurativa

The treatment of impetigo, ecthyma, acute infectious eczematoid dermatitis and superficial folliculitis in general should follow along these lines:

1. Daily debridement is of utmost importance. The tops of pustules should be clipped daily and all of the softened debris removed manually.

2. Soap and water cleansing of all other areas several times daily should be carried out unless irritating. The general use of an antiseptic powder twice daily and after bathing may be helpful.

3. Warm moist compresses are usually of considerable value. Either 1:4000 potassium permanganate, 1:20 Burow's solution or 0.1 per cent Dakin's solution can be recommended. These solutions are usually more effective than physiologic saline in the treatment of cutaneous pyogenic infections.

4. When compresses are discontinued 5 per cent ammoniated mercury ointment, boric acid ointment, or Quinolol compound ointment should be rubbed in well 3 to 4 times daily.

5. *Penicillin administered parenterally* is not indicated unless the lesions are severe and extensive or unresponsive.

The treatment of erysipelas:

1. Insist upon bed rest. Force fluids.
2. Immobilize the affected part.
3. Apply wet compresses.

4. a. Parenteral penicillin is the most effective therapeutic agent and should be administered at once. Give 20,000 to 30,000 units intramuscularly every two hours or 300,000 to 600,000 units of a slowly absorbed penicillin preparation daily. Continue therapy for at least 48 hours after the temperature becomes normal.

- b. If penicillin cannot be utilized, the sulfonamides (particularly sulfadiazine) should be administered as early as possible.

5. A search for the portal of entry should be made to prevent recurrences.

6. The use of antitoxin and ultraviolet light are usually not necessary.

In the *treatment of acute pyogenic infection superimposed upon dermatophytosis, eczema and other dermatoses*, it is best to treat the pyogenic infection first. The pyogenic element ordinarily is the more acute component of the two. The same type of therapeutic approach would be indicated in these cases as was suggested for the primary acute pyodermas. Appropriate therapy for the underlying eczema or some other primary dermatosis can be postponed until the pyogenic element is cleared.

The treatment of sycosis vulgaris: The existence of a deeply infected follicle as in sycosis vulgaris can usually be ascertained by manually epilating an involved hair and noting the glassy root sheath of the hair which ordinarily slips out easily if infected.

1. Apply hot wet antiseptic compresses, debride crusts, manually epilate infected hairs, and advise daily shaving.

2. Apply Quinolol compound ointment, 5 per cent ammoniated mercury ointment, or Vioform Creme after compresses have been discontinued. The ointment should be rubbed in three or four times daily and after shaving.

3. Tincture of zephiran or Intraderm Tyrothricin painted on locally is a useful adjunct if applied two or three times daily.

4. Ultraviolet light locally in suberythema doses daily is often helpful.

5. If topical treatment fails, in vitro studies on the organism are of help in deciding

upon an effective drug. Penicillin and/or one of the sulfonamides may be indicated parenterally.

6. X-ray therapy locally in fractional amounts and in subepilating doses is usually helpful but in general should be avoided if a cure can be obtained otherwise.

In treating sycosis vulgaris medication should be applied thoroughly and even up to the nasal mucous membrane. The nose frequently harbors the pathogenic staphylococcus and this area may be the source of reinfection. Relapses tend to occur most frequently in patients with coryza, seborrhea, or other concurrent dermatoses. Emotional factors may play a part in instances of relapse.

The treatment of hidradenitis suppurativa would at first involve the same measures as indicated for sycosis vulgaris. If therapy proved unsuccessful, surgical excision or drainage might be necessary.

The treatment of furunculosis:

1. Advise bed rest. Immobilize the affected part.

2. Cover the area with an antiseptic ointment if the lesion is intact. If it is draining, a hot wet antiseptic compress is indicated.

3. If painful, apply local heat in the form of infra-red light or diathermy. Cleanse the surrounding areas with tincture of green soap and apply tincture of zephiran, or Intraderm Tyrothricin.

4. Do not traumatize or squeeze. The patient must not "finger" the lesions.

5. When "pointing" occurs, incise the central point. The use of cruciate incisions is usually not only unnecessary but contraindicated. Remove the central plug when it loosens. Encourage the adequate flow of pus with the frequent application of warm antiseptic compresses. The surrounding skin under the compress can be protected with boric acid ointment.

6. Roentgen therapy given early increases the rapidity of healing and helps to alleviate pain.

7. If progress is delayed or new lesions continue to appear, administer each day intramuscularly 300,000 units of penicillin in a delayed absorption base. If penicillin is ineffective, the oral use of sulfonamides may be indicated.

8. Furuncles of the nose and lip are treated with bed rest, penicillin parenterally, hot wet compresses, and x-ray therapy. Trauma and surgery should be avoided. These lesions sometimes lead to severe complications.

The treatment of carbunculosis is similar to that for furunculosis. However, the prognosis is more serious. The injection of 300,000 to 600,000 units of penicillin daily is indicated and should be administered in divided doses every two hours if the patient is hospitalized. It should be given without delay. Surgical incision is sometimes indicated.

SUMMARY AND CONCLUSIONS

(1) Two organisms, the hemolytic *Staphylococcus aureus* and the beta hemolytic streptococcus, are largely responsible for the pyodermata which in turn comprise a considerable portion of present-day dermatologic practice. The treatment of these cutaneous infections may become difficult if the organism is not sensitive to the drugs available, if the patient's own defenses are poor, or if other complicating factors occur.

(2) The topical use of penicillin, the sulfonamides, furacin, and other drugs carries with it decided risks because of the danger of cutaneous sensitization. Therefore *what not to do* is an important consideration.

With the large scale use of sulfonamides and penicillin, numerous serious limitations and reactions are appearing more frequently. It seems best to avoid the use of those drugs in the treatment of the pyodermata which may be needed urgently for other more serious diseases later.

(3) At the present time penicillin is one of the useful agents against the majority of these infections. However, there seems to be both an increase in the number of penicillin-resistant infections and also the number of patients who have become sensitized to the drug. The therapeutic advantages of penicillin may continue to decrease in the years to come because of these tendencies.

(4) The important factors in the treatment of the pyodermata involve local debridement and the finding of a medicament to which the patient's organisms are sensitive. Overtreatment is often the cause of therapeutic failure. It is important that the

physician become adept in the effective use of a small number of the least sensitizing drugs. This should prove more successful

than trying to master a lengthy list of drugs whose skillful use will require considerable experience.

PSYCHOSOMATIC ILLNESS

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and

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The psychosomatic concept of certain illnesses is relatively young since most of the data concerning this approach have been gathered and developed in the last twenty years. It is sufficiently old, however, to have passed beyond the stage of being a vague and little understood concept to a majority of the medical profession. Perhaps there are still a few points that need further elaboration.

A psychosomatic illness is a definite entity in which the symptoms are either caused or aggravated by the emotional make-up of the patient. It is therefore a psychoneurosis with somatization; a better term perhaps than psychosomatic illness. It is a condition in which a thorough study of the patient's personality becomes important. The symptoms arise from a definite psychogenic background which *must* be found. As in other psychoneuroses, these illnesses result from disturbed interpersonal relations.

Part of the difficulty of understanding the importance of the emotional factor has arisen in the past because every busy practitioner does not have the time to investigate completely the emotional make-up or personality profile of the patient; nor does he have the time to spend with the exten-

sive psychotherapy necessary to produce improvement. It is important to understand the role played by the emotions, however, when we see a patient with recurring peptic ulcers who has had long continued dietary management and even surgical removal, but who continues to have recurring ulcers until the emotional factor has been considered and treated with psychotherapy. With all we can do medically in mucous colitis, the patient may continue to have alternating constipation and diarrhea for years until his personality is completely studied, and the cause for buried resentment found and corrected by properly applied psychotherapy.

A patient with an emotional instability which has produced somatic symptoms referable to the autonomic nervous system is the classic example of a psychosomatic illness. It may closely resemble the psychoneurotic condition, conversion hysteria. Both are actually psychoneuroses, but the first has less of the psychic component involved than the second condition and therefore needs less deep psychotherapy for cure. It will be easier to understand both conditions, and in what way a psychosomatic illness is different from other psychoneuroses, if we list the differences between these two:

Psychoneurosis with Somatization

1. Symptoms referable to the autonomic nervous system.
2. Original psychic trauma mild but often repeated over a long period of time.
3. Symptoms usually cause considerable concern.
4. Choice of symptom fits usually a definite personality profile.
5. Relatively mild psychotherapy required for cure.

Psychoneurosis—Conversion Hysteria

1. Symptoms referable to either the sensory or motor component, or both, of the central nervous system.
2. Original psychic trauma usually sudden, sharp and severe.
3. Symptoms often regarded with indifference, even though incapacitating, because they are a profound defense mechanism.
4. Choice of symptom usually symbolically related to the psychic trauma.
5. Deep psychotherapy required.

The Psychosomatic Clinic of the Medical College of Alabama in Birmingham is a little over a year old. During that time patients with the following psychosomatic conditions have been seen and treated:

Peptic ulcer	Mucous colitis
Asthma	Neurodermatitis
Tension headache	Auricular fibrillation
Persistent vomiting	Chronic diarrhea
Angina	Hypertension
Nervous cystitis	Dyspnea with palpitation

In addition, there were many cases with mixed symptoms which can only be covered by the poor diagnostic term, hypochondriasis. These cases were referred to the Clinic by physicians, and various members of the staff on service in the Jefferson-Hillman Hospital and the Outpatient Department, often without any attempt at screening by making a prior diagnosis. Some of them were simply classified as "neurotic," and had been coming to the outpatient clinics for a long time. Less than 2 per cent were found to be malingerers, which is a psychoneurotic condition itself when thoroughly analyzed. Sixty-five per cent of these patients were discharged as improved following adequate psychotherapy. We hope to improve this percentage of improved cases during the current year when the house staff has been trained to look more closely for a psychogenic background before referring cases to the Clinic. Merely failing to find an organic basis for the patient's complaint does not make the diagnosis of a psychosomatic illness; a definite psychogenic background must also be present.

A little elaboration of the meaning of a psychogenic background is perhaps important at this point. The term "neurotic" is a poor one and can be misleading, partly because it connotes a certain weakness in the patient which is offensive to us. The average busy practicing physician dislikes seeing such a patient. A better descriptive term would be a patient with unstable emotions. When these patients are thoroughly investigated, it often develops that the unstable emotions were caused by definite psychic injuries which they cannot handle in a mature manner, rather than any actual weakness in the patient's personality. The psychic injury was too overwhelming. When we find a definite cause we are less likely to blame these patients or become irritated with them for their persistently peculiar

behavior which may seem very immature. The patients who are more likely to have unstable emotions are those whose histories reveal that they had nightmares when they were children, bit their finger nails, walked in their sleep, or wet the bed later in life than normally expected. They may have phobias for high places, crowds, or closed rooms; they may reveal that they have to go through little rituals of compulsive counting, or saying certain phrases over and over when they become disturbed to help relieve their nervous tension and anxiety. The above suggest a patient with a *potentially* unstable emotional make-up. It is well to remember, however, that every patient with a potentially unstable emotional make-up does not always run into overwhelming psychic trauma, and potentially stable personalities may run into very alarming and overwhelming psychic trauma. In addition, any indication in the patient's history that he has reacted to life situations in an unusual or inadequate manner, whether with more than ordinary feeling or lack of all feeling, and has repeatedly followed this unusual pattern whenever he has been under more than the usual stresses of life, strongly indicates a psychogenic background. Nervous habits, preoccupations, signs of temperament and unusual reactions to stress all suggest a psychogenic background. A psychogenic background then means any event in the patient's history indicating an overwhelming psychic trauma to either an emotionally stable or unstable personality, or a milder psychic trauma in the life of an individual already prepared by his unstable emotional make-up to respond in an immature manner. Of course it is obvious that the greater number of cases will appear in the latter group. It is interesting to note that sometimes indications of a psychogenic background will appear as prominently in the history as the somatic symptoms themselves, if we will indicate an interest and sympathy for anything the patient wishes to say.

The psychic component of a psychosomatic illness may range from 5 per cent to 50 per cent; when it is more than that, the condition is a more deeply seated psychiatric condition requiring deeper psychotherapy. It is well to remember that relatively minor psychic trauma repeated often enough over a long period of time can lead to badly dis-

turbed interpersonal relations. A brief history of a typical Clinic case will serve as an example:

This patient, when five years old, lost her mother through death, and her father remarried shortly afterward. The stepmother was very cruel to all the children, but the patient found that she could avoid some of the suffering by withdrawing as far as possible from any of the family activity. She adopted the defense of retreating into an inner shell to avoid conflict with her stepmother, and found that this kept her out of trouble. Years later, when she married, she reacted to conflict in her home in the same manner when her husband began to drink heavily. When the children or neighbors annoyed her, she retreated again within herself. Shortly after the first child was born, symptoms of peptic ulcer appeared and lasted with almost daily nausea and vomiting for ten or twelve years up to the time she appeared in the clinic. Family contact was limited to only the barest social intercourse which even involved the children; she never saw her neighbors and had no friends. She busied herself with housework which she said she enjoyed and preferred to any contact with people. On her first visit to the Psychosomatic Clinic she was reticent and withdrawn, almost like a schizophrenic. It was difficult to get her to talk at all. However, her Rorschach test indicated that she suffered from a psychoneurosis rather than schizophrenia. After a few visits her personality profile began to take shape and indicated that her defense adjustment to life was entirely foreign to her basic personality. She needed *more* than the average contact with people. When this was pointed out to her and the suggestion was made that her behavior was merely a defense mechanism that was not sufficient or adequate because it produced her ulcer symptoms through disturbing her autonomic nervous system, she began to relax a little. Her husband had stopped drinking heavily and she was encouraged to seek social contact with him and the neighbors. When she did so a few weeks later, her symptoms began to disappear. In a few more weeks she began to gain weight and had stopped vomiting for the first time in years. As she increased her contact with people and gained interests outside herself there was a considerable change in her per-

sonality. She has been followed for over a year and has remained free of symptoms. This brief summary demonstrates that, although this patient had at no time any very violent emotional outbursts, she had been ill and unhappy from symptoms of peptic ulcer for many years because she had altered her basic personality through adopting a defense mechanism which was incomplete in that it relieved her emotional tension somewhat but still produced somatic symptoms. The tension was on a subconscious level but sufficient to alter the balance of her autonomic nervous system to the point that it produced the somatic symptoms.

Various psychotherapeutic measures have been utilized in the Psychosomatic Clinic in treating these cases, including both the psychobiological concept and the analytical. One type of therapy will fit one case and another will best fit another. A comprehensive history which thoroughly investigates every possible source of an emotional disturbance is essential both for diagnosis and treatment. The personality profiles for various psychosomatic illnesses as established by Alexander and French, in Chicago, and Flanders Dunbar in New York, have been found most reliable. These cannot readily be developed without allowing the patient to talk at great length and tell his complete story. Patients frequently say in the Clinic that it was the first time anyone would listen to all that they wanted to say about themselves. Rapport, most essential in any type of psychotherapy, can only be established by a sympathetic, attentive attitude, and the creation of a certain dignity around even the patient's minor complaints. The first step in therapy is to let the patient feel that anything he wishes to say warrants your time and interest.

In every psychoneurotic condition, by the time the patient reaches you, he will have established a neurotic defense for his emotional difficulties. This defense will be an incomplete defense, however; it will relieve the patient of a certain amount of anxiety, but enough will remain to continue to produce symptoms. As in most psychiatric conditions anxiety in some form is present, and stimulates the preparation of the patient for either fight or flight away from what disturbs him which brings into play a typical activation of the autonomic nervous system. His blood pressure is raised, his

heart beats a little faster, his lungs attempt to take in more oxygen, blood is squeezed out of the splanchnic capillary bed and made more available to the muscles, internal organs which are unessential to fight or flight become quiet and inactive, and certain glands of internal secretion become more active. If this reaction is constantly repeated from relatively minor stimuli because of increased anxiety, the autonomic nervous system responds a little more readily each time and finally becomes unstable because of overexcitation. The effect of this on the blood vessels, glands of internal secretion, and smooth muscle in time produces the somatic symptom of which the patient complains.

Although the patient has no direct control over his autonomic nervous system, as he does over his central nervous system, he has an indirect control through control over his emotions. In a great many instances, an explanation of how his emotions are disturbed through anxiety, and how his autonomic nervous system responds to this in preparing for fight or flight and produces his symptoms through a chronic state of unnecessary preparedness, gives him the needed insight into the causes of his suffering. Gaining this insight into the manner in which control of emotional outbursts can stabilize his autonomic nervous system is a potent therapeutic tool, often, in fact, one of the most reliable.

Therapy through modified psychoanalysis is of great benefit. Some of the psychoanalytic techniques, such as free association and dream analysis, are quite helpful and easily used with certain patients. Their use implies, of course, a knowledge of analytic concepts and dynamisms.

One thing that was determined during the past year in the Psychosomatic Clinic was that the degree of the patient's intelligence was not important in the acceptance of psychotherapy. Frequently it was found that a patient of limited intelligence would react to his emotional conflicts and gain insight more readily than some other patient of a higher intellectual level, if insight was presented in proper form. With the foreign born and colored population it was frequently noticed that a descent to the patient's intellectual level in the form of familiar vernacular was rewarding. They could understand anticipated insight if it

was put in the form of words which they themselves were accustomed to use.

The term psychosomatic was chosen to indicate somatic complaints that arose in part from emotional disturbances, and hence was a disorder both psychic and somatic. If we treat the psychic element and ignore the somatic we fail just as often as when we treat the somatic and ignore the psychic component. The proper concept of psychosomatic medicine then is obviously well-rounded and complete treatment for both elements. A certain number of harmless sedatives and psychic stimulants such as the dextrodine compounds are useful in the early stages of treatment until sufficient rapport can be gained to assure improvement through psychotherapy. All of these patients should receive whatever laboratory tests are indicated, heart and blood pressure examinations, and a thorough knowledge of their organic functions. Psychosomatic and organic disease can be present in the same patient; the body and mind cannot be separated but must be treated as a whole. A considerable number of the Clinic patients were undernourished and it is obviously ridiculous to ask them to gain better emotional control while letting them remain malnourished. Often, a neurological examination is necessary to rule out disease of the central nervous system. The psychosomatic concept means then no change in the ordinary methods of practicing medicine; only that the psychic element is important too and should not be ignored. Therapy must include necessary psychotherapy along with the usual methods of practice.

Due to the extreme shortage of psychiatrically trained physicians a large amount of psychotherapy in psychosomatic illness can be accomplished by the general practitioner with a little clearer understanding of what should be attempted. Sympathetic understanding and the assurance that the patients' complaints are valid is a considerable part of the battle. Familiarity with the various personality profiles and some understanding of the dynamics and mechanisms involved in the production of their symptoms is a distinct aid to successful therapy. The ability to tell them what to do about anxiety, buried resentment, tension, unexpressed anger, which they may not have realized consciously, is another step along the road

to cure. The ability to visualize their actual problems as related to their particular cultural status, in their special set of interpersonal relationships, can assist one in planning therapy for them. Although it may seem a little complex and time consuming at first, there is nothing vague or magical in the commonsense approach to attempting to understand people's emotional difficulties. It is definitely *not* all based on sexual difficulties. They can be seriously ill from other causes emotionally, and need help that can be commonsense and in no manner even distantly related to any magical philosophical hocus-pocus. They simply become frightened emotionally, which stimulates their autonomic nervous systems to behave in an unstable fashion, which in turn makes cer-

tain organs behave abnormally.

The psychosomatic concept then is important in those illnesses in which somatic complaints have arisen on a psychogenic background from disturbed interpersonal relations, and in which therapy is usually successful when an investigation and study of the personality picture through properly applied psychotherapy is made along with the usual methods of medical practice. It is based on the fact that certain illnesses are a dysfunction of the patient's emotional life as well as a dysfunction of his organs. It seems more sensible, in these particular illnesses, to attack the center of the problem rather than to treat alone the end results in the organs themselves where the trouble did not originate.

DOSAGE OF DRUGS—INFANCY AND CHILDHOOD

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*"... Could thou and I with fate conspire
To grasp this sorry scheme of things entire,
Would not we shatter it to bits—and then
Remould it nearer to the heart's desire!"*

Much of the difficulty in pediatric posology is due to the child's irregular behavior toward medicines. These young patients do not respond to drugs in general, pound for pound, in the same degree as the adult. We have learned that by reason of inherent characteristics peculiar to infancy and early childhood the susceptibility to different drugs during this period varies from dosage in the proportion of Clark's rule to one approaching that of the adult. This requires of the practitioner appraisalment, as far as possible, of the medicines he uses according to this susceptibility. Otherwise, age seems to enter into determination of dosage only as indicating the average approximate weight of the patient.

Of rules commonly used for estimating the child's dose of a medicine, Clark's and Bastedo's are based on the proportion of the patient's weight to the adult weight of 150 pounds. Also, dosage indicated by Young's rule follows these so closely as to be in great part almost identical. The usefulness of these rules, therefore, is much limited since the 150 pound ratio is suitable for calculating dosage of only a few drugs, the

most important being opiates.¹ However, it seems a safe starting proportion for tentative administration of drugs for which no set dosage is established.

To correlate the infant's or child's varying susceptibility to different medicines to a rule or formula for determining proportional dosage, a changing factor must be employed and this may be accomplished by reducing the adult weight factor from 150 pounds to a percentage thereof giving the dosage ratio deemed correct for the drug being employed. Let us assume for the sake of illustration that a number of medicines, to be therapeutically effective, should be given in 25 per cent larger doses than indicated by Clark's rule. To calculate such dosage the patient's weight is proportioned to 80 per cent of the weight of the adult or 120 pounds. A fifteen-pound baby, then, in-

1. Neff, Frank C., *The Treatment of Colic in Infants*, J. A. M. A. 114: 1745-1748 (May 4, 1940), recommends, at two weeks, dosage of 1/20 grain of codeine and ten minims of paregoric. At this age the average weight is about 7½ pounds or 1/20 of 150 pounds, hence the dosage is in proportion to one grain of codeine and 3¼ drams of paregoric for the adult.

Mitchell-Nelson, *Textbook of Pediatrics*, Fifth Edition, W. B. Saunders Co., 1950, gives the dosage of morphine for infants at from 1/1000 to 1/-600 of a grain per pound of body weight. For the 150 pound adult this gives a dosage of 1/6 to 1/4 of a grain.

stead of being given 15/150 of the adult dose of such medicine, would receive 15/120.

WEIGHT FACTOR

In determining dosage, the weight of the patient is usually one of the most important considerations. This is particularly evident when dosage of the medicine to be employed is set at a small fraction of a grain or minim per pound of body weight. Since it is often desirable to know a patient's approximate weight and impossible or impracticable at times to weigh the individual, the following formulas are suggested. They indicate the approximate average weights in pounds at the different months after birth up to nine and the average yearly weights thereafter until the beginning of puberty.

Weight formula for infants under one year: (When birth weight is about seven pounds): Average monthly weights during the first year, from four to nine months, are approximately indicated by adding ten to the age in months. For younger infants, add seven at one month, eight at two months and nine at three months.

Example:

1 month plus 7 equals	8 pounds
2 months plus 8 equals	10 pounds
3 months plus 9 equals	12 pounds
4 months plus 10 equals	14 pounds
5 months plus 10 equals	15 pounds
6 months plus 10 equals	16 pounds
7 months plus 10 equals	17 pounds
8 months plus 10 equals	18 pounds
9 months plus 10 equals	19 pounds

Weight formula for infants and children from one to ten or twelve years: To the age in years add three and multiply by five.

Example:

1 year plus 3 equals	4 x 5 equals	20 pounds
2 years plus 3 equals	5 x 5 equals	25 pounds
3 years plus 3 equals	6 x 5 equals	30 pounds
4 years plus 3 equals	7 x 5 equals	35 pounds
etc.		

This formula is based on the average gain in weight of five pounds a year. During the first year, however (i. e. from conception to the end of the first year), the weight accumulation to be taken into consideration is about twenty pounds. The excess over five for this first year (fifteen pounds) is provided for by adding three in each equation before multiplying by the yearly gain of five pounds.

Where a younger child is obviously larger than the average for the age, if the mother

can tell what size clothing she buys for him or her, the weight will usually be close to that which is average for the age size indicated by the clothing.

MEASUREMENT OF DOSES

Doses of drugs for babies are usually small. When prescribed in powder or tablet form, it is an easy matter to give any definite amount desired. With liquids, however, the accurate measuring of small doses is not so simple. Teaspoons vary in size and they could not have been fashioned to make the estimation of $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ more difficult. Drops vary much in volume, not only with the size of the orifice of the dropper employed, the angle at which it is held and the lip of a bottle but also with the liquids concerned—water, oils, syrups, alcohol.

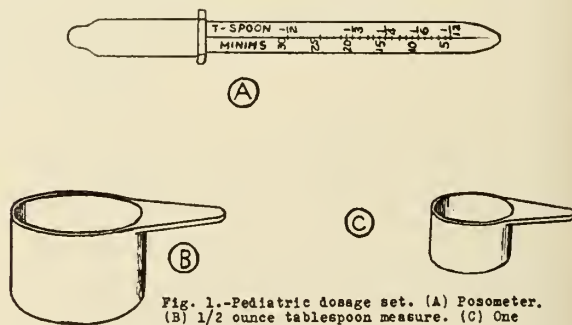


Fig. 1.—Pediatric dosage set. (A) Posometer. (B) $\frac{1}{2}$ ounce tablespoon measure. (C) One dram teaspoon measure.

The dosage set shown in figure 1 is suggested to meet this difficulty. An accurate half ounce tablespoon measure would be helpful in measuring powdered milks, sugars and syrups for milk modification. The dram teaspoon would serve where the physician deems it important for the patient to receive an accurate dram instead of a five or six cc. dose of medicine. By use of the posometer any definite amount from five minims to a half dram may be accurately measured.

COMMENT

The usefulness of weight proportioning is chiefly determination of doses of medicines at the different age-weight levels of infancy and early childhood when the child-adult ratio of susceptibility is known and, in case of need, for child-adult proportioning where pediatric dosage of a drug is not established. As Nelson² says: "Thorough studies designed to establish minimum effective dos-

2. Mitchell-Nelson, Textbook of Pediatrics, Fifth Edition, W. B. Saunders Co., 1950.

ages of the more important drugs for children of all age groups are needed. Each drug should be tested individually, preferably on healthy children and also under conditions of disease."

It is well to remember that the child eventually becomes an adult and with growth and the passage of time the differences in susceptibility gradually diminish and cease to exist.

KAPOSI'S VARICELLIFORM ERUPTION

REPORT OF A FATAL CASE

WM. HARVEY BLANK, M. D., F. A. C. A.
Birmingham, Alabama

The case presented below is that of a 7 months old, white female infant who had had intractable atopic eczema since the first week of her life. At the age of 7 months, her eczema became complicated by Kaposi's varicelliform eruption, now thought to be due to the virus of herpes.

Kaposi described this complication of infantile eczema in 1887. It has been only in recent years that much attention has been paid the condition, and the diagnosis is now being made more frequently.

CLINICAL DESCRIPTION

By far, most cases reported have occurred in infants and young children. Some cases, however, have been reported in adults. Invariably, there is a preexisting atopic eczema. The disease manifests itself with an elevated temperature which may reach 105° F. The temperature remains elevated for about one week. In some cases nausea and vomiting, or diarrhea or both, occur. There is intense itching. The skin lesions appear first on the preexisting eczematous areas and later invade the intact skin. The lesions are discrete, small vesicles, which appear in crops, and may or may not become umbilicated. The vesicles contain clear fluid unless they become contaminated, in which case they are purulent. Some of the vesicles may coalesce to form large raw surfaces. In those patients who survive, this superimposed condition completely clears, leaving the original eczema.

Complications which may occur include suppurative lymphadenitis, otitis media and bronchopneumonia. Fatalities have been reported, the mortality rate ranging from 4% to 38% in different series.

ETIOLOGY

The cause of this distressing, and at times fatal, condition has been obscure until re-

From Southern Allergy Clinic, Birmingham.

cent years. Kaposi himself confessed his ignorance. The streptococcus, staphylococcus and fungi have at various times been suspected. More recently, however, filterable viruses have been rather definitely established as the causative agents. There is still some controversy as to whether the virus of vaccinia or that of herpes simplex is the specific one involved. Evidence available at the present time would tend to indict the virus of herpes simplex. However, an outbreak of this condition during the mass inoculation for vaccinia of the population of New York would quite definitely also involve the virus of vaccinia. In any given case, identification of the specific virus in the laboratory will determine the etiologic agent.

CASE REPORT

C. H., a 6 months old, white female infant was seen first in January 1950. The infant was full term, and delivery was normal. Artificial feeding was instituted during the first week of life, and within several days atopic eczema was noted. A number of hypo-allergenic milks were tried but with no benefit. Foods were added routinely as in infants not so affected. None of the various medications used altered the course of the eczema which involved the entire body. On two occasions hospitalization had been necessary to control copious weeping of the skin.

A soy bean milk was gradually substituted for the evaporated milk and within one week after the infant was taking only this milk a definite and steady improvement took place.

The baby was admitted to the hospital because of elevated temperature and the appearance of a rash. The present illness began with an elevated temperature, up to

105° F., and the appearance of a rash, consisting at first of erythematous papules which, within a few days, became vesicular, gradually increasing in size. Those appearing first were on the forehead. As the illness progressed, all sites of the body became involved. In some areas, the vesicles became confluent and ruptured, leaving denuded skin areas. A number of the vesicles became purulent. Except for a somewhat reddened throat and lymphadenopathy in the axillae and inguinal regions, the physical examination was negative. As the rash progressed, the underlying atopic eczema appeared better. The temperature ranged between 101° and 105.4°. Treatment consisted of parenteral penicillin, elixir of Benadryl, sedation, riboflavin and routine skin care. Examination of the blood on admission revealed the following: red cell count 3,700,000, hemoglobin 10 gm. per 100 cc.; and a white cell count of 14,600, 72% segmented and 20% lymphocytes with 8 monocytes. Of the segmented forms, 36 were stabs. The laboratory at the hospital was not equipped to make studies for a possible virus. An antemortem blood culture grew a short chain streptococcus and *Bacillus pyocyaneus*. These were considered as possible contaminants because of the markedly ulcerated character of the infant's skin.

The patient continued restless but she fed well and at no time appeared moribund. During the night of Feb. 22 the temperature rose to 104.2° and remained at this level until the early morning of Feb. 23 when it began to drop precipitously and continued downward to 93.6 when the patient expired. A postmortem examination failed to reveal anything significant.

DIAGNOSIS AND TREATMENT

The diagnosis of this condition is not difficult and will be made more frequently if it is kept in mind. The almost exclusive occurrence in eczematous children and the characteristic lesions are the cardinal points in diagnosis. Some of the more recent cases have been treated with aureomycin and encouraging results reported. The remainder of the treatment is supportive. Restraints to prevent scratching and mild antipruritic lotions are helpful. Penicillin for protection against complications should also be used.

SUMMARY

A fatal case of Kaposi's varicelliform eruption is reported. The most effective treatment of this condition would seem to be in its prevention. This can be accomplished by the immediate and persistent treatment of infantile atopic eczema and by keeping these patients from contact with viral lesions.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

This ten year old female was brought to the Children's Clinic with a history of having had headaches every day for over a year. The headaches occur at different times of the day and last about thirty minutes. They occur more often in the morning and are more severe then than other times. They are usually unilateral and frequently followed by vomiting. Aspirin gives no relief.

Physical examination revealed no abnormalities except that she is a few pounds underweight. The blood picture showed a red count of 4,490,000 and a white count of 7,300, made up of 41 per cent polymorphonuclears, 53 per cent lymphocytes and 6 per cent eosinophils. Hemoglobin was 12.5 gm., and the urine was clear.

A working diagnosis of migraine was made, after elimination of other possible causes, in spite of the fact that migraine seldom occurs every day. The fact that the father has migraine was a possible influence in the decision.

She was skin tested with the following foods and inhalants, the + sign indicating the positive findings:

Cat hair+	Cabbage
Dog hair+	Celery
Horse hair	Carrot
Goat hair	Green pea
Rabbit hair	White potato+
Wool	Tomato+
Feathers	Banana
Cottonseed	Grapefruit
Kapok	Orange
House dust	Peach
Orris root	Pear
Cod fish+	Strawberry
Beef	Lima bean+
Chicken+	String bean+
Lamb+	Barley+
Pork+	Corn

Oats	Pineapple
Rice	Peanut
Rye	Pecan
Wheat	Navy bean
Milk	Dried pea
Lactalbumin+	Lettuce
Egg	Turnip
Cocoa+	Apricot
Mustard	Prune
Coffee+	Trout+
Tea	Sweet potato+
Apple+	Timothy
Grape+	Ragweed

She was given a diet eliminating the foods she was allergic to, and within one week the headaches ceased, and she has been free of them for six months at this writing.

Migraine is an uncommon condition in children and usually occurs at intervals of from 2 to 4 weeks instead of daily. It is often inherited, apparently as a mendelian dominant factor, or it may occur in children with an inherited neurotic tendency. Among assigned causes are toxemia of some sort, cerebral anemia, cerebral congestion, conditions of faulty metabolism, eyestrain, and allergy. Migraine is more common in females. Cyclic vomiting in the young child may be replaced by attacks of migraine.

This case is reported to call attention to the allergic factor in many cases of migraine.

This premature infant (4 lbs.-1 oz.) was brought to the hospital at the age of six days with a history of having vomited every thing taken by mouth since birth. He had had a few meconium stools but all of them were small. He was dehydrated and distended on admission and the general condition was very poor. An order was left to give a soda enema and to continue it until all of the meconium was removed. After a time a meconium plug was passed, the distention promptly disappeared, and there was no more vomiting.

This was a case of meconium ileus. This condition usually occurs in premature infants who are unable to expel the inspissated meconium. However, it occasionally occurs in full term infants.

Enemas will usually remove it. However, rectal dilatation and manual removal have to be resorted to occasionally.

DISCUSSION

The first fecal discharge of the newborn infant not infrequently contains the so-called "meconium plug"—a round or cylin-

dric mass formed in the rectum during fetal life, and different from ordinary meconium, being grayish white to pale yellow in color, and putty-like in consistency. Unlike ordinary meconium, it contains neither bile pigment nor cholesterol. The meconium plug is of no practical importance. In rare instances, however, a large portion and sometimes the entire intestinal canal is filled with pale putty-like meconium resembling that of the meconium plug. This material cannot readily be moved along and gives rise to intestinal obstruction. In some instances, when the obstruction is incomplete, masses of putty-like meconium are passed during the early days and there is a variable amount of vomiting and distention, but the condition clears up spontaneously. In other cases there is persistent vomiting and increasing distention, and little or no material is discharged by rectum. Such cases may terminate with rupture of the intestine and meconium peritonitis.

The cause of this curious condition is not altogether clear. A number of instances have been associated with cystic fibrosis of the pancreas; in others, the pancreas has been normal but there has been obstruction of the bile ducts; both forms of obstruction may co-exist. It would appear that such biliary and pancreatic obstruction may at times be caused by developmental defects and at other times by inspissation of the earliest secretions, which are likely to be unduly viscous. It seems altogether probable that the peculiar character of the meconium is caused by failure of the digestive secretions. Although chemical analysis of putty-like meconium is not available, fat stains show that this material is rich in lipids. Andersen regards the condition as a steatorrhea, which, as is well known, may be caused either by defective pancreatic or biliary secretion.

The possibility of meconium ileus should be thought of in vomiting and distention of the newborn, particularly premature infants.

In a world in which cooperation on the political level seems at present an unrealizable dream, it is heartening to recall that it has existed for a long time in the field of health. Widespread public health is both an instrument and a condition of any lasting peace.—Dr. F. W. Behmler, *Minnesota's Health*, October 1950.

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TRENDS IN ANTIBIOTIC THERAPY

“The majority of serious infections commonly encountered in the United States at the present time are amenable to treatment with chemotherapeutic agents. New antibiotics have appeared so rapidly, however, that difficulty is often experienced in selection of the proper agent and dosage for a specific patient. The present discussion deals with recent developments in this rapidly changing field, with emphasis on the relation of the various antibiotics to one another and to the sulfonamides.

“With the introduction of aureomycin, chloramphenicol (chloromycetin) and terramycin, indications for the sulfonamides are becoming ever more restricted. There are only three commonly encountered conditions in which sulfonamides may still be regarded as the drug of choice, namely, uncomplicated urinary tract infections, bacillary dysentery and meningococcic meningitis. Sulfonamides are also often administered in conjunction with penicillin or other agents in the treatment of certain severe infections, such as pneumococcic meningitis. Triple sulfonamide mixtures, which reduce the incidence of crystalluria, appear to represent a real advance and have gained widespread popularity.”

Thus does Kirby¹ begin his rather brief but very excellent consideration of this subject. He goes on to tell us that “despite the advent of antibiotics which may partially replace it, the demand for penicillin has remained high. Perhaps the most noteworthy trend in penicillin therapy has been the adoption of slowly absorbed procaine penicillin G preparations for the treatment of virtually all infections caused by penicillin-sensitive organisms. Even subacute bacterial endocarditis, except when caused by resistant forms of streptococci such as enterococci, responds favorably to this simplified form of therapy.”

The Seattle observer tells us that “tuberculosis remains the principal disease for which streptomycin therapy is indicated. Because of its toxicity and the rapid development of bacterial resistance, streptomycin is being supplanted by aureomycin, chlor-

1. Kirby, William M. M.: Recent Trends in Antibiotic Therapy, J. A. M. A. 144: 233 (Sept. 16) 1950.

amphenicol and terramycin for the treatment of most other infections for which streptomycin was once clearly the agent of choice." And we are further told that "outstanding characteristics of these new antibiotics are (1) their low toxicity, (2) the broad spectrum of infectious agents against which they are effective, and (3) their relatively good absorption from the gastro-intestinal tract, which makes oral administration feasible from a therapeutic standpoint. The three antibiotics will be considered together since they possess many features in common and with few exceptions none has shown definite superiority over the others in the treatment of most infections. Terramycin has been investigated clinically for less than a year, and statements concerning it must, therefore, be accepted more tentatively than for the other two agents."

We are also informed that "absorption of all three agents from the intestinal tract is relatively good, supplying therapeutic levels in the blood stream for twelve hours or more following a single oral dose of 1 Gm." And "many of the infections in which aureomycin, chloramphenicol and terramycin exert their most striking effects are relatively uncommon in the United States. Examples are typhoid fever, psittacosis, tularemia, lymphogranuloma venereum, granuloma inguinale and most of the rickettsial infections. It seems appropriate in this review to place special emphasis on infections commonly occurring in this country in which these antibiotics are of value. Some of the more important ones are pneumonia and other respiratory infections, urinary tract infections, cellulitis, abscesses, peritonitis, diarrhea, brucellosis and penicillin-resistant fevers.

"Respiratory infections undoubtedly constitute the largest single group of diseases for which the orally administered antibiotics are currently being used. The common cold, 'undifferentiated acute respiratory disease' and influenza A and B make up the majority of such infections, and the value of antibiotics against this group of viruses is far from established. In one of the few studies so far reported on this subject, rapid clinical improvement was noted with aureomycin therapy. Some of the patients described had broncho-pulmonary in-

volvement but others did not, and it was impossible to determine definitely whether the response resulted from suppression of the infecting virus or of secondary bacterial invaders. Treatment of such conditions will inevitably continue on a large scale and is probably justified from the standpoint of prophylaxis against pneumonia even if it is finally determined that the causative viruses are not affected. It should be noted that pertussis, a condition often difficult to diagnose with certainty, appears to respond to aureomycin."

Kirby states that "in urinary tract infections there is usually a good initial clinical and bacteriologic response to treatment, except with *B. proteus* or *Ps. aeruginosa*. Even with the colon-aerogenes group, however, relapses are common if the infection is chronic or if obstruction is present. Excellent results have been obtained in the treatment of cellulitis and certain types of abscesses. Here again the possibility of penicillin-resistant staphylococci is to be considered in choosing an antibiotic. The results in peritonitis and brucellosis are most gratifying and require no special comment. As a cause of diarrhea, amebiasis is of special interest because of its apparent response to newer agents, in contrast to its lack of susceptibility to any of the earlier antibiotics. Viral agents causing gastro-enteritis are apparently not affected, and the response in *Salmonella* infections is far from dramatic. In dysentery caused by *Shigella*, results are similar to those obtained with sulfonamides, which are probably still to be preferred because of their lower cost."

Kirby gives a fine summary of the present situation in the field of antibiotic therapy—a field in which new drugs are constantly making their appearance and in which there is need for frequent shifting of therapeutic agents. It is difficult for practitioners outside of great medical centers to keep adequately informed in regard to this rapidly developing and ever changing subject. But nevertheless it behooves all practitioners to endeavor earnestly to keep up to date and to use these drugs wisely and with full knowledge concerning their effects both beneficial and toxic.

BETTER SERVICE PROGRAM FOR THE HANDICAPPED

A better and broader program is offered to Alabama's handicapped population in 1951 than ever before. The Alabama Society for Crippled Children and Adults, Inc., has been assisting with the program for crippled children and adults since 1926, each year ending with a greater number of cases marked "cured." The Society works with all public and private agencies that are engaged in a program for the handicapped.

Funds are derived from an Easter Seal Campaign which is conducted by the Alabama Society throughout the State each year one month preceding Easter. The County chapters of the Society provide transportation for children who have to go to clinic or treatment centers; workers and lunches at field clinics; fruit, candy, books and games to children in hospitals and convalescent homes; and many other services to make life happier for our crippled children and adults.



The Alabama Society has been working toward the rehabilitation of all handicapped the past twenty-five years. The Society makes available to professional workers and parents of handicapped children literature regarding the particular type of disease in

which they are interested. With the aid of the literature and the advice of the nurses and social workers, the parents are better prepared to give their children the proper care at home.

County chapters of the Alabama Society are already receiving their Easter Seals, and these will reach practically every home in Alabama within the next month. When you contribute to the Easter Seal Campaign you are helping to provide funds for an even better and more intensive program for the handicapped in Alabama.

COMMITTEE OF TRAUMA AMERICAN COLLEGE OF SURGEONS

For several years the American College of Surgeons has been actively engaged in establishing measures for the prevention, first aid, and, to a lesser degree, treatment of trauma. Originally this was more or less limited to fractures but recently, however, it has expanded and is now referred to as the Fracture Committee of the College of Surgeons' Committee on Trauma. This expansion is to include practically all portions of the body, and the prime purpose is to disseminate knowledge and create interest in the proper early care of trauma, so vital to the patient. With trauma as it affected fractures particularly as the theme, and with the main idea of preventing complications, many years were spent in publishing information, in having conferences, and in promoting proper first aid measures and methods of transportation.

Briefly, the set-up is one of a national committee which has been broken down into sectional areas embracing all the states of our country. The chairman of this area having been appointed, he appointed chairmen and co-chairmen of the different states composing the area and they serve to direct the educational program referred to. The state chairman, in turn, appointed a committee which was a good cross index, more or less, of the different types of trauma. These different committeemen were to work locally, give instructions, and in various ways disseminate the knowledge which has been gradually jelling into a well coordinated procedure. Many groups other than professional could be utilized, as the State Highway Patrol, safety men of the different

industrial activities, groups interested in public or civic matters, Boy Scouts, and others. To this may be added nurses who, in many instances, come in contact with trauma at its onset.

It seems apropos at this time, when our country is in a national crisis and in the process of mobilization, that considerable emphasis be put on the primary care of trauma, the transportation of the patient and to establish facilities for early and adequate care.

Civil defense will assume a major role if we should be so unfortunate as to become actively engaged in war, and it can be seen that a liaison between this committee and the group of laymen engaged in civil defense is most important, not only for the assistance that may be given but in the problem of giving proper instructions, evacuation, handling, and a definite coordinated effort without confusion which will tend to minimize permanent injuries, loss of manpower which is so vital at this time, and many other conditions.

The very fact of this emergency, the immediate stepping up of industrial expansion, the imminent congestion of municipalities, increasing traffic on highways, and other factors that will step up accidents and all types of trauma make it most important that a well coordinated program be put into effect at the earliest possible moment. It seems that this is not a one man job but collectively of many groups, and its ramifications cannot be underestimated. It should and must give a stimulus for the acquisition of at least a basic knowledge of ways to meet the emergency.

The functioning of the Committee of Trauma of the American College of Surgeons is national, sectional and local. Annually each state chairman gives a report to the sectional chairman and at an area meeting discussion of the reports is encouraged. The Sectional Chairman then makes his report to the national chairman. At least once yearly there is a national meeting at which Sectional Chairmen, State Chairmen, if desired, and others particularly fitted to bring their knowledge to these meetings are present. Out of this meeting a report is made giving all pertinent facts, and the report is sent out to all interested parties in the form of a brochure.

It is hoped that every member of the State Medical Association will have an opportunity to read this editorial and will offer any contribution which, in his opinion, would be of definite value in shaping up a well coordinated and functioning group. On this basis it is hoped that county medical societies will put aside one meeting, or more if demands justify, to discuss the problem of trauma. The committee offers any assistance they may desire, and in a few instances may even be able to dispatch one of its members to meet with the society. Your chairman would like, and hopes that time will be available, to make a state-wide tour, at least to key centers, to discuss this problem with local groups interested in the program. It may be that certain committee groups will be requested to make visits to their surrounding counties to discuss these conditions so pertinent to our present crisis.

Hypnosis in Therapy—The prevalent feeling of distrust and hostility towards the use of hypnotherapy is, to a considerable degree, due to its unfortunate association in the public's mind with the melodramatic performances of the stage hypnotist.

Two sharply contrasting technics of inducing hypnosis are described in detail: An authoritative technic similar to those generally seen on the stage, which is best adapted to the unsophisticated, dependent type of personality; and a non-authoritative technic which is better adapted to those patients who are more analytically-minded or who resist authoritative methods through fear of loss of dignity or self control. The latter method is felt to have a wider range of usefulness as it can be successfully employed in more than 95 per cent of unselected patients.

It is felt that hypnotic suggestions are necessarily interpreted by the patient in terms of his past experience. Hence suggestions are far more effective if worded so as to recall previous experiences more on a sensory than a purely verbal level. The patient can then "re-experience" and utilize them in enormously greater detail than could ever be achieved by "verbal" means alone.

Hypnosis remains a very valuable aid in therapy but should not be thought of as supplanting other methods of treatment. It is best employed to reinforce, and add speed and directness to psychotherapy in which the goal is restoration of a previous level of functional equilibrium rather than an exhaustive reintegration of the personality structure.—*Nelson and Thigpen, J. M. A. Georgia, Dec. '50.*

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

ANOTHER STEP FORWARD

W. A. Dozier, Jr.

Director of Public Relations

Several important actions were taken by the American Medical Association while in session in Cleveland, Ohio in December. Perhaps the most noteworthy of these was the decision by the Board of Trustees to designate half a million dollars to start a fund for the purpose of helping medical colleges with their financial burdens.

No one denies that many medical schools were and are in dire straits. The cost of operating such a school as a medical college must of necessity be staggering. Most people do not see that there is a definite difference between medical instruction and undergraduate academic instruction in say history, or in graduate instruction as in law. The tremendous cost of equipping a laboratory or of furnishing machines with which the present day physician must be familiar is not known by most people. The opinion of many people might be summed up as, "I pay my taxes. We have medical colleges which should be able to make out as other schools have; so why can't I get a doctor when I want one?"

The medical profession, by and large, has opposed federal aid to medical schools on the grounds that once the money was accepted the door would be open for government domination of the school. Those favoring federal aid have said that such was not the aim of the plan and that such could never happen. Assuming that the present proponents of federal aid do not want federal domination of the medical colleges and even assuming that safeguards were written into the law, one must still realize that the next Congress or one ten years hence might have different ideas. One must also remember that court decisions often have changed what seemed to be the apparent intention of a law by merely handing down a decision that expands the seeming original intent. Such matters as the above must be considered before starting something, for once begun the way back often is impossible.

Many deans of medical schools have favored federal aid, and one can easily see why. Remember that a dean has a job to do and wants to do it well. No matter who the man is, he is likely on occasion to become immersed in detail, to burn with a great desire to accomplish, to appear to lose his perspective, and to seem to reach for any straw in the breeze. Each of us catches himself doing just that when over a long period of time we are faced with the same problem which gradually seems to become insurmountable.

The action by the Board of Trustees in December has shown that the profession wants to keep faith with these men who run the colleges and has shown these men that concrete steps are being taken.

Perhaps an even more telling effect will be had on those who have been thumping loudest for granting federal aid and who at the same time have been loudest in their condemnation of the National Education Campaign. Whether one agrees or disagrees with the philosophy behind this Education Campaign, it is easy to see how telling the argument was which said the money should have gone where it was most needed, that is to medical colleges. Even though you might not agree, you must admit that much could be and was made of just that point. As soon as the announcement was made telling of the decision to start a fund, there were those who said it was not enough. But, then, is there ever enough? The fact remains that a beginning has been made and from this beginning an auspicious accomplishment may be realized.

Although there were those who ridiculed and knocked at the action taken by the Board, many others felt differently. An editorial in the Cleveland Plain Dealer said, "This is aid to medical education from the right source—from the medical profession itself—instead of from the federal government; for the inevitable concomitant of federal subsidy is a steadily increasing measure of federal control. The action by the A. M.

A. is heartening. It should be copied by all who are concerned with the preservation of medical education, inquiry and research unfettered by government regulation."

It is easy to criticize and often very hard to make real progress. The above seems, however, to be a true step forward in many respects.

WOMAN'S AUXILIARY

Mrs. J. G. Daves, Cullman, President

ANOTHER COUNTY AUXILIARY

We are very proud indeed to have Baldwin County as one of us, and it is with a great deal of joy we welcome it into our organization.

We want to take this opportunity to tell the ladies of Baldwin County that every officer and committee chairman in the state, and every organized Auxiliary will always stand ready to assist them in any way they may need us.

DOCTOR'S DAY

Mrs. J. C. Chambliss, Cullman, chairman of Doctor's Day, writes each Auxiliary member as follows:

As you know we all want to have a bang up Doctor's Day program this year. We are having cash prizes as follows: first prize, \$7.50; second prize, \$5.00, and three prizes of \$2.50 each.

We do hope you can have your Doctor's Day program on March 30, or as near that date as possible.

Really it will be a lot of fun. Plan to have good publicity before and after the program. All members should be urged to be present, and as many as possible participating. Then all you have to do is streamline your account of the program with news items, favors, pictures and full descriptions—all together in a scrapbook or whatever you prefer to use. It may be given in narrative, outline or poetry.

Remember: the prize is for the most unique, original Doctor's Day program. As you know the State Convention is April 19, so if you are coming (and we all hope you are), you may bring your scrapbook and leave it at the desk for me at Headquarters Hotel, or you may mail it to me here in Cullman. If you mail it, it must arrive by

April 15. A committee of five will be named by our President, Mrs. Daves, to review the accounts of the programs sent in from each county.

If you feel you need more information—I will be glad to hear from you. For your radio program, may I suggest a poem about our doctors, or a short story, or whatever you would like to have; and above all, the red carnations for March 30 for each and every doctor to wear that day. If you live where some of your doctors are out in the country, ask your florist to mail him the carnation ahead of time so he can start and end the day of March 30 wearing his red carnation.

I have poems and brief sketches on Doctor's Day if you would like to add a little more to what you already have planned.

SOMETHING ABOUT DOCTOR'S DAY

On March 30, 1842 Dr. Crawford Long employed ether for the first time as an anesthetic, and so it was to commemorate this great achievement as recorded in medical history that in 1934 the Auxiliary to the Southern Medical Association adopted a resolution which designated March 30 as Doctor's Day. It is the one day in the year when we may have an opportunity to show honor and respect for our Doctors, so let's make something real nice of it this year.

The first Doctor's Day was observed in Atlanta, Georgia in 1935, and since that time the Southern States have observed that date. Doctor's Day has now become a national observance.

It is the wish of our Doctor's Day Chairman, Mrs. J. C. Chambliss, Cullman, that the following resolution be presented and passed upon at the State Convention in April:

WHEREAS, We are well informed about the histories of soldiers, sailors, kings and statesmen, in-

ventors and discoverers, saints and craftsmen, who have changed our destinies, but omit the struggles of the Medical Profession in its unwearying pace, unknown and unsung, to make human living safe, and

WHEREAS, These pursuers of truth, the Practitioners of the Medical Arts, have been the real force in shaping and changing our civilization, and

WHEREAS, They have made vivid, valiant struggles and sacrifices for the defense of human living, therefore be it

Resolved by the Auxiliary to the Medical Association of the State of Alabama, That March 30 be adopted as Doctor's Day; the object to be the well being and honor of the profession, living and dead, and the study and commemoration of their promotion of health and happiness during the ages; the observance demanding some act of kindness, gift, tribute.

SUGGESTIONS FOR DOCTOR'S DAY

1. Have a radio program honoring the physician.
2. Publish a tribute to our doctors in your local newspaper.
3. Send telegrams, letters, notes, or telephone each doctor in your county best wishes.
4. Send flowers to doctors' offices, hospitals, or clinics.
5. Send boutonniere to each doctor to wear as reminder of our love, respect and appreciation of him.
6. Place flowers on graves of deceased doctors in your local cemetery.
7. Visit sick and retired physicians, or remember them with flowers or notes.
8. Plan a social function for your medical society—barbecue, luncheon, dinner, banquet, dance, or picnic.
9. Plant trees in honor of your medical society.
10. Send newsy, cheerful letters to doctors who are in the Armed Forces.
11. Devote day of March 30 to your doctor and our doctors.

CIVIL DEFENSE

On December 28 the Civil Defense Administration released its health service handbook, "Health Services and Special Weapons Defense," on which the National Security Resources Board and other experts worked for almost six months. This booklet is the

product of extensive conferences and reviews, in some of which American Medical Association representatives participated. It is a paper bound booklet of 250 pages, containing numerous graphs and diagrams to facilitate preparations for handling atomic bomb casualties.

Individual copies may be purchased from Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 60 cents each, with a 25 per cent discount for purchases of 100 or more. A few copies now are going out from C. D. A. to state and local civil defense officials but the supply is limited.

This presentation is described as an outline "of functional needs rather than an administrative blueprint," but it is the closest thing to a national directive on the subject that can be expected for many months. Information contained is essential to all persons involved in civil defense health services planning, as well as to physicians who will play the major role in treating victims of any possible atomic attack.

Almost every phase of health service preparation is discussed—radiological and biological poisoning, training and first aid, hospital expansion, public health aspects, laboratory services, etc. Of particular interest to physicians are the handbook's paragraphs on *treatment of burns*. Because federal medical stock piles must be somewhat standardized, one particular burn treatment is singled out as "an effective method which could be used for all cases and would be adaptable to mass-treatment methods . . . and would not predetermine subsequent treatments." This dry-dressing treatment is described as follows: "The dressing consists of a cellulose pad, one inch or more in thickness, faced and backed with gauze . . . Each pad must be sufficiently large to cover the entire burned area . . . Two sizes are available, 12 by 24 and 24 by 36 inches . . . Pad is held in place by means of a tensile yarn roller bandage, applied firmly and evenly but with only gentle pressure. . . . Rubberized bandages are neither necessary nor desirable."

The handbook recommends that first aid stations have some 75 different items on hand, *stocked and maintained locally*. As a reserve, the U. S. will maintain regional stockpiles of about 50 *items* which can be

shipped into a community in a matter of hours. The handbook emphasizes, however, that the community must have enough supplies available to handle the first wave of injured. When a first aid station's supplies run out, the U. S. will be prepared to ship in a complete, standardized new stock. For later use, Civil Defense Administration has worked out a formula based on requirements for each 1,000 patients. This calls for shipment of certain specified supplies, including 15,000 packages of penicillin in 200,000 units, 3,000 morphine tablets or syrettes of $\frac{1}{4}$ grain, and 25 sets of surgical instruments (26 optional instruments included).

LEGISLATION

Because of press of other legislation, the House Interstate and Foreign Commerce Committee was not able to take action before the holidays on the new local public health units bill (H. R. 9914) introduced by Representative Percy Priest (D.-Tenn.). However, the Committee may be expected to consider the matter shortly after the 82nd Congress convenes. This bill emphasizes the importance of public health services to civil defense and meets some of the objections raised by the American Medical Association to earlier bills, but in structure and financing resembles the others. The Senate passed a public health units bill more than a year ago (S. 522). Because all pending legislation died when the special session closed, a new bill will have to be introduced.

Meanwhile, the U. S. Public Health Service has released a pamphlet "Your Best Buy," designed to stimulate interest in local public health units. In an accompanying statement, Surgeon General Leonard A. Scheele says, "The international crisis makes the need for more and better local health departments even more urgent. In event of attack, or threat of attack, large numbers of people from potential target areas would be dependent upon the public health services of rural and urban fringe areas, many of which may have no health departments. Such services should be promptly organized to prevent epidemics and to fit local health and medical services into the state and national programs."

The pamphlet makes no direct reference

to the bill but notes that a local public health unit offering the basic services can be started for \$1.50 per capita from all sources, the minimum set in H. R. 9914. It also points out that "states—with their own and federal funds—can help pay for local public health services." Copies of the pamphlets are for sale at five cents by the Superintendent of Documents, Washington 25, D. C.

NURSE RECRUITMENT

In the last two issues of the Journal much space has been given to the nursing situation as confronting us today. There is no end to the amount of assistance the doctor and his wife can give in furthering nursing careers for more girls and boys. Please re-read your December and January Journals, and keep uppermost in your minds this very important nursing problem in which you can lend your assistance in helping to overcome.

Our nursing school enrollment is falling far short of capacity, and because county needs are not met and nursing care of patients has fallen below minimum standards in many areas of Alabama, Auxiliaries should welcome the opportunity of supporting the Student Nurse Enrollment and Counselling Committee. This committee is forming joint committees over the state for the purpose of student nurse recruitment, and the Auxiliary should work hand in hand with these joint committees in their activities directed toward interpretation of opportunities in a nursing career and stimulation of clubs and organizations to set up scholarship loan funds.

"In war as in peace the contribution of nursing to the welfare of our people is vital. Already plans are under way for the sharing of nurse-power among the military and civilian population. The U. S. Department of Labor has placed nursing on the list of critical occupations," said Miss Emilie G. Sargent, President of the National Organization of Public Health Nursing, in a recent article in Journal of Public Health Nursing.

Very often it is the family doctor who is approached and has an opportunity to give guidance to the prospective applicant to the nursing school. Through his knowledge of nursing schools in Alabama, the re-

quirements for entrance and fields of nursing open to applicants, he can do much to assist in this united effort to find the right students.

For further information write: Miss Frances Raley, Director of Student Nurse Enrollment and Counselling, 2119 First Avenue N., Birmingham.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

FIGHT POLIOMYELITIS

Poliomyelitis, or infantile paralysis, is a virus disease. This means that it is spread by an infinitesimally small organism. It is so small in fact that it cannot be detected under even the most powerful microscope. Keep it from traveling from the sick to the well, and you break the chain of infection. There will be no more poliomyelitis if and when that happens.

Soon after entering the body, that dangerous virus usually travels to the principal nerve centers. (That explains its reputation as primarily a nerve disease.) There it begins attacking the inner gray cells of the medulla, or marrow, or the cells of the spinal cord. (It may attack both types of cells.) Finding ample substance there for its subsistence, it grows and thrives. Those cells it attacks, however, are much less fortunate. For not only do they stop growing: They also, in many cases, suffer actual destruction. That brings about the loss of their power to control the body's muscles. That is how those muscles become paralyzed, bringing on the paralysis associated with the disease. And that causes what the doctors know as impairment of function. The layman knows it as crippling, or deformity. Whatever you may call it, it is one of the most tragic fruits of this or any other form of illness.

All nerve cells are not destroyed in this way, however. The degree of paralysis suffered by the victim is determined by the extent to which such destruction takes place. If the paralysis is only partial, a measure of recovery may be hoped for. Fortunately, partially injured nerves may recover their normal function. In such cases, however, the muscles which formerly were controlled

by the partially paralyzed nerves suffer irritation. This produces what is known among medical men as a "spasm." That, often but not always, causes acute pain. Thus paralysis and pain may be produced by the same form of illness. One of the most helpful discoveries of recent years regarding infantile paralysis is the beneficial effects of hot, moist applications at the time these attacks occur.

There are several types of poliomyelitis, as of most other forms of illness. The most widely prevalent is known as "abortive polio." Its symptoms are misleading, and this makes it difficult to diagnose. Indeed they are often so mild that they may lead the victim and his parents to think there is nothing wrong. Even if they realize he is sick, they may decide there is no occasion for alarm or for calling a physician. The victim may appear perfectly normal except for a headache, which may be only slight. Or he may experience slight vomiting, which, in the absence of other symptoms, it is easy to attribute to something one has eaten. If he should take his temperature, or if someone should take it for him, a slight elevation above normal might be noted. But hardly anybody knows anything about his temperature unless he thinks he is sick. Or he may have a stomach upset, which, as likely as not, like the vomiting spell that he may experience, will be attributed to something he ate which did not agree with him. And if the victim should have a sore throat, as most of us do from time to time, he is not likely to think of the danger of poliomyelitis in the absence of some other reason to do so.

Discussing this type of poliomyelitis, a spokesman for the National Foundation for Infantile Paralysis wrote in a booklet published by that organization:

"There are no evidences of paralysis. It is probably this form that helps to bring about immunity for a vast number of persons. It is not known how many mild cases of this disease oc-

cur, nor the ratio of those mild abortive cases to paralytic cases of the disease. It is believed, however, that there are as many as twenty or more times the number of abortive forms of the disease occurring as there are of the paralyzing forms."

Another and more serious form of the disease is caused when the invading virus becomes more active upon reaching the central nervous system. That type produces more marked and more easily identified symptoms. Characterized by a stiffness of the neck, but no paralysis, this type is known as "non-paralytic poliomyelitis." There is no permanent injury to the nerve cells. Those youngsters who are relatively fortunate enough to contract this type constitute the great bulk of those—estimated at half of all who contract poliomyelitis—who recover completely without any permanent crippling or deformity.

Most people form their conceptions of poliomyelitis and its effects on the basis of their acquaintance with the paralytic type. This, fortunately, represents a minority of the cases. In these there is wholesale injury to nerve cells, with resultant loss of their ability to function normally. This causes the muscles which they control to become enervated and thus unable to direct body functions. Whether paralysis involves the legs, the arms, or some other part of the body depends upon which nerves (controlling muscles which in turn control certain parts of the body) are involved. A poliomyelitis victim is particularly unfortunate if this paralysis strikes the muscles which control breathing. For this involves a most vital function. If it is serious enough, it makes death inevitable, unless the victim is placed immediately in a respirator, or "iron lung." It mechanically causes the lungs to expand and contract and thus takes the place of the paralyzed muscles. To save the lives of such victims many hospitals have "iron lungs" ready for instant use. Others are made available, as needed, by the National Foundation for Infantile Paralysis and its local chapters. Others are owned by municipalities and other agencies and organizations. They work with the National Foundation and its local chapters in making their facilities available immediately when and where needed. At the present time there are 32 respirators in Alabama, ready to serve those requiring them. Ten are in

Jefferson, three in Montgomery, two each in Houston, Lauderdale, Mobile and Morgan; and one each in Calhoun, Clarke, Colbert, Dallas, Etowah, Geneva, Macon, Marshall, Talladega, Tuscaloosa and Walker counties.

Should there be a poliomyelitis epidemic in this state serious enough to require more respirators than the 32 just listed, there are more to be had, and on very short notice. The National Foundation for Infantile Paralysis maintains six equipment pools in as many states. They are in Des Moines, Denver, Columbus (Ohio), Boston, Atlanta and San Francisco. In case of emergency, additional ones, as well as other equipment that may be needed, should be there in a matter of hours, if need be. That "other equipment" mentioned includes hot pack machines, wool for hot packs, etc.

Officials at Maxwell Field Air Force Base at Montgomery have been especially cooperative in making their personnel and facilities available for flying equipment to places where it is needed. Thanks to them, there is little chance that there will be idle respirators in Alabama when they are badly needed elsewhere.

You may have known one or more poliomyelitis victims who experienced considerable difficulty in speaking. They, most likely, had been attacked with the poliomyelitis virus in the region of the medulla, or "bulb." That consists of the thickened collection of nerve tissue at the upper extreme of the spinal cord. There are concentrated many of the vital nerve centers of the body. Whenever that area is involved, the patient is said to be suffering from "bulbar polio." When a case of this kind develops, the nerves governing the throat muscles may be affected, making speech difficult. This type of infection may also interfere with swallowing. Parents are therefore warned to be on the alert for either of these departures from the normal whenever poliomyelitis is unusually prevalent in a community. They should act promptly whenever it appears.

Polio virus lodging in the medulla may also affect the victim's breathing and create an emergency which is dissolved only slightly, if at all, by use of the respirator. This, therefore, is a particularly serious form of the disease. By way of partial, but only

partial, compensation for its grave potentialities, this type is relatively rare.

Medical knowledge in the poliomyelitis field is being augmented constantly. For new and ever newer discoveries are steadily being made. And of course this causes revisions from time to time in the concepts of the nature of the disease and the most effective means of dealing with it. Until relatively recent years it was widely believed among the country's and indeed the world's leading men of medicine that the poliomyelitis virus entered the body only through the nasal passages and the olfactory nerve, or the nerve of smell. It was that belief which caused the State Department of Health and county health departments during the 1936 poliomyelitis epidemic in this state to recommend the widescale use of a nasal spray as a preventive measure. This theory appeared to rest upon a pretty solid foundation. Among its supports was the fact that a number of Rhesus monkeys had contracted the disease after being inoculated with the virus in the region of the nose. It was only natural, in the absence of evidence to the contrary, to assume that man received the infection in the same way. Time and subsequent research, however, proved this to have been an unsound assumption. Studies of the olfactory nerves of deceased poliomyelitis victims revealed that only a small minority of them had suffered damage there. It has since been revealed, too, that monkeys and chimpanzees can readily be infected by way of the mouth. Thus to hope for protection against poliomyelitis by blocking the nasal passage as a means of entrance for the germ has been found to be as futile as trying to keep a youngster out of a certain room in the house by locking only one of its two or three doors.

Medical opinion now is that the poliomyelitis virus may invade the human body by at least two routes: first, through the mouth and intestinal tract, that is to say, the stomach and intestines; second, through the nose and lungs.

The important role played by the first of these routes—the mouth, throat and intestinal tract—was emphasized in an article published some time ago in *The Journal of the American Medical Association*. Its authors were Drs. F. B. Gordon, Frank M. Schabol, Jr., and William I. Fishbein, of Chi-

cago, and Dr. Albert E. Casey, of Birmingham. Dr. Casey, at that time a resident of another state, spent some time in Alabama during the epidemic of 1941 working with staff members of the State Department of Health.

These four medical men made hundreds of tests of both sick and well children in the Chicago area during the infantile paralysis outbreaks there in 1945 and 1946. On the authority of what those tests revealed, they stated that they considered poliomyelitis viruses in and around the throat a "common source of infection."

For one thing, they wrote, they had succeeded in establishing the presence of poliomyelitis viruses in the throats of three children before they actually contracted the disease.

They visited hundreds of presumably healthy children in epidemic areas. Some of them had been closely associated with other youngsters who, since, had developed infantile paralysis. Throat and mouth swabs were taken of both types of children—those who had been closely associated with poliomyelitis victims and those who, as far as they knew, had had no such contact. Of those presumably well youngsters who had had such contacts, five subsequently developed poliomyelitis. Viruses in specimens from three of them were successfully transferred to monkeys. They produced cases of the disease in those animals.

Unlike certain other infective agents, the virus of infantile paralysis has a particular affinity for the nervous system and travels along it much as the germs of other diseases—septicemia and malaria, for example—travel in the blood stream. Remembering this, many physicians strongly urge parents not to have their children's tonsils or adenoids removed during a poliomyelitis epidemic. Some of them go even farther. They object to tonsil operations at any time of the year when an outbreak is most likely to occur—that is to say, in the summertime. They explain that for several weeks after such removal a part of the throat may contain exposed nerve endings. These offer extremely favorable points of admission for the virus. Aided in that way, they point out, it travels fairly rapidly to the area which will be attacked. Delaying tonsillectomies and the removal of adenoids until the polio

danger has abated may be a wise step in the direction of preventive care but, as is true in so many medical matters, there is difference of opinion regarding this, some physicians maintaining there is no hazard attached.

Poliomyelitis is a treacherous disease. It calls for constant vigilance on the part of parents everywhere. They should not become asleep to its dangers even in cold-weather time, when this enemy normally is less deadly than in summertime. The State Department of Health and county health departments are eager to do everything they can to keep every Alabama child — and grown-up too, for that matter—as safe as possible. Both Alabama’s parents and Alabama’s public health agencies have powerful friends and supporters in the National Foundation for Infantile Paralysis and its state and local chapters. All together, they make a powerful team. It should become even more powerful as time goes on.

BUREAU OF LABORATORIES

Dewey M. Wells, Act. Director

SPECIMENS EXAMINED

NOVEMBER 1950

Examinations for diphtheria bacilli and Vincent's	395
Agglutination tests (typhoid, Brill's and undulant fever)	862
Typhoid cultures (blood, feces and urine)	307
Examinations for malaria	185
Examinations for intestinal parasites	5,474
Serologic tests for syphilis (blood and spinal fluid)	23,534
Darkfield examinations	10
Examinations for gonococci	1,701
Examinations for tubercle bacilli	3,178
Examinations for meningococci	3
Examinations for Negri bodies (microscopic)	63
Water examinations	1,279
Milk and dairy products examinations	4,150
Miscellaneous	4,005
Total	45,136

Surveys have shown as much as four times more active tuberculosis among people 65 to 74 years of age than among the age group 15 to 24. Moreover, it appears that the disease more frequently goes unrecognized in the older population. In the Washington, D. C., survey, only 4 per cent of the older cases processed by the survey (aged 65 and over) were previously known to the health department, as against 25 per cent of the group 34 years of age and under.—*Journal-Lancet*, Robert J. Anderson, M. D., April 1950.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

	1950		E. E.*
	Oct.	Nov.	Nov.
Typhoid and paratyphoid	6	2	4
Undulant fever	2	4	1
Meningitis	3	3	8
Scarlet fever	77	81	107
Whooping cough	75	111	67
Diphtheria	59	53	93
Tetanus	5	2	3
Tuberculosis	287	396	207
Tularemia	1	1	1
Amebic dysentery	3	0	1
Malaria	4	10	87
Influenza	38	39	151
Smallpox	0	0	0
Measles	13	11	38
Poliomyelitis	26	18	5
Encephalitis	0	0	0
Chickenpox	24	57	62
Typhus	8	1	33
Mumps	22	28	37
Cancer	326	350	176
Pellagra	3	3	3
Pneumonia	78	58	180
Syphilis	546	709	1251
Chancroid	10	4	13
Gonorrhea	349	198	478
Rabies—Human cases	0	0	0
Positive animal heads	14	15	0

As reported by physicians and including deaths not reported as cases.
*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

EXPERIMENTAL USE OF CHLORDANE SUPPLEMENTAL SPRAYS FOR IMPROVED FLY CONTROL IN ALABAMA

1950 DDT RESIDUAL HOUSE SPRAY PROGRAM

Contributed By

Oscar V. Lopp, Sanitarian (R)
Alabama C. D. C. Entomologist

In consideration of the fact that local participation in the state-wide malaria control Residual DDT Spray Program has become largely dependent upon the accompanying reduction of houseflies on sprayed premises, the Alabama State Health Department has become intensely interested in applying a residual spray that will give the desired control of the malaria-carrying *Anopheles* mosquito and, at the same time, produce satisfactory housefly control. Within the past few years some investigators have criticized the effectiveness of DDT residual spray for its alleged failure to control houseflies, and have recommended the use of other closely related insecticides such as chlordane to obtain a more effective housefly control. The State Health Department, in cooperation with the U. S. Public Health

Service, Communicable Disease Center, Atlanta, Georgia, therefore decided to perform a large-scale field experiment to be conducted as a part of its regular 1950 Malaria Control Program for the purpose of determining the relative fly control merits of a partial DDT spray supplemented by a partial chlordane spray, compared to the regular DDT spray alone.

The experimental spray area was composed of a group of nine contiguous counties situated in the south-central part of the state where the concentration of agriculture generally contributes to the production of considerable numbers of flies. For evaluation purposes the experimental area was divided into two parts designated as the Autauga Area and the Crenshaw Area, each named after the county which received the chlordane treatment in the respective areas.

In Autauga County DDT was applied to the walls and ceilings of all rooms of the houses except the kitchens, and chlordane was applied to the walls and ceilings of the kitchens, under porches, to protected surfaces of outbuildings, and as a larvicide on the surface of manure piles. In the Autauga Area DDT was applied as a house spray in the north part of Montgomery County, the west part of Macon County and the south part of Elmore County. The control or unsprayed portion of the Autauga Area was composed of Chilton County, the north part of Elmore County, and the east part of Macon County.

In Crenshaw County DDT was applied to the walls, ceilings, and porches of houses, and chlordane was applied to the protected surfaces of outbuildings and as a larvicide on the surface of manure piles. In the Crenshaw Area DDT was applied as a premises spray by State-CDC crews in the major portion of Lowndes County. The control or unsprayed part of this area was made up of Pike and Butler Counties, and the south half of Montgomery County.

For the purpose of uniformity of operational procedure all experimental area spraying was performed by State-CDC supervised crews using similar spray emulsions and application techniques. The chlordane used was a two and one-half percent xylene-Triton-water emulsion applied at the rate of 100 mg. per square foot. The DDT used was the regular five percent xylene-

Triton-water emulsion applied at the rate of 200 mg. per square foot. Only one application was made with the spray operations beginning in March and ending in June.

The evaluation program, stressing uniformity of inspection and reporting, was begun on April 1 and carried on continuously until October 15 by two trained inspectors, each of whom was assigned to an experimental spray area. Every possible effort was made to carry out an inspection procedure designed to yield data that would be mathematically comparable for purposes of evaluation of the biological results obtained. Inspections of sprayed premises within all the different residual age-class groups were distributed over as many months as possible to insure consideration of such varying factors as climatic changes and population trends.

Detailed daily reports of spraying operations were furnished by the spray crew foreman to the inspectors, thus enabling them to maintain their maps and records up to date for the purpose of computing the residue age-class of sprayed houses to be inspected.

Individual premises inspection procedure followed closely the entomological inspection instructions issued in previous years by the Communicable Disease Center, U. S. Public Health Service, and the form used for recording the data was furnished by that organization. Houses chosen for inspection in practically all cases were of the open construction type to which flies and mosquitoes had easy access. The major information recorded for each sprayed premises inspection was as follows:

(a.) Name of county, beat number, house number, insecticide used, date sprayed and date inspected.

(b.) Inspection of the house for presence of *Anopheles quadrimaculatus* mosquitoes.

(c.) Count or estimate of the number of muscoid flies present in the one room of the house having the most flies, with the type of room indicated by appropriate symbol (K—kitchen, B—bedroom, etc.).

(d.) Count or estimate of the largest number of muscoid flies present on one square yard of the premises in the immediate vicinity of the house.

(e.) Inspection of the best natural resting place on the premises for the presence of *Anopheles quadrimaculatus* mosquitoes.

(f.) Record of the previous spray history of the house.

(g.) Age-class of spray residue at the time of inspection.

Appropriate information was recorded for unsprayed premises inspections.

A total of 3616 inspections were made in the nine counties comprising the entire experimental area during the period April 1 to October 15, 1950. Tables I and II show the distribution of these inspections by individual area and type of treatment. The average number of flies per high-count room are given by age-class of residue for the sprayed inspections, and by month for the unsprayed inspections.

TABLE I
AUTAUGA AREA INSPECTIONS

Number of Flies Per High-Count Room for 690 Chlordane* House Inspections			
Age of Residue (Months)	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
0-1	180	3276	18.20
1-2	180	7570	42.05
2-3	180	5916	32.87
3-4	150	4931	32.87
Total	690	Total 21693	Season Average 31.43

*Interiors of houses, except kitchens, treated with 200 mg. DDT per sq. ft. Chlordane applied at rate of 100 mg. per sq. ft. in kitchens, under porches, on interiors of outbuildings, and as a larvicide on manure. All treatments one application.

Number of Flies Per High-Count Room for 690 DDT* House Inspections			
Age of Residue (Months)	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
0-1	180	3666	20.37
1-2	180	8064	44.80
2-3	180	5981	33.23
3-4	150	4929	32.86
Total	690	Total 22640	Season Average 32.81

*DDT applied at rate of 200 mg. per sq. ft. on interiors of houses, under porches, and on interiors of outbuildings. One application made.

Number of Flies Per High-Count Room for 436 Unsprayed House Inspections			
Month	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
April	60	1349	22.48
May	76	3548	46.68
June	60	10251	170.85
July	60	6065	101.08
August	60	6025	100.42
September	60	5637	93.95
October	60	3131	52.18
Total	436	Total 36006	Season Average 82.58

TABLE II
CRENSHAW AREA INSPECTIONS

Number of Flies Per High-Count Room for 690 Chlordane* House Inspections			
Age of Residue (Months)	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
0-1	180	2879	15.99
1-2	180	5692	31.62
2-3	180	8002	44.46
3-4	150	6158	41.05
Total	690	Total 22731	Season Average 32.94

*Interiors of houses treated with 200 mg. DDT per sq. ft. Chlordane applied at rate of 100 mg. per sq. ft. under porches, on interiors of outbuildings, and as a larvicide on manure. All treatments one application.

Number of Flies Per High-Count Room for 690 DDT* House Inspections			
Age of Residue (Months)	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
0-1	180	3585	19.92
1-2	180	10278	57.10
2-3	180	7383	41.00
3-4	150	5881	39.21
Total	690	Total 27127	Season Average 39.31

*See footnote, Table I, DDT Inspections.

Number of Flies Per High-Count Room for 420 Unsprayed House Inspections			
Month	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
April	60	1195	19.22
May	60	1502	25.03
June	60	7613	126.88
July	60	6055	100.91
August	60	5178	86.30
September	60	3428	57.13
October	60	2981	49.68
Total	420	Total 27952	Season Average 66.55

Comparison of the contents of Tables I and II indicates (1) no appreciable difference in the effectiveness of the two types of chlordane treatments, (2) no appreciable difference in the effectiveness of chlordane compared to DDT, and (3) a significant reduction of flies in sprayed houses. Combining and averaging the related figures given in Tables I and II reveals the following comparative seasonal averages:

1380 chlordane inspections—32.19 flies per high-count room.

1380 DDT inspections—36.06 flies per high-count room.

856 unsprayed inspections—74.72 flies per high-count room.

It should be added that a combination of

natural factors favorable to an unusually large increase in the fly population in Lowndes County the first part of June was apparently reflected in the DDT inspections beginning with the 1-2 months age-class in the Crenshaw Area.

Tables III and IV show the distribution of sprayed houses by fly density groups and age of spray residue for the Autauga Area and the Crenshaw Area, respectively. Table V indicates the same information for the unsprayed house inspections in both these areas, except that the classification "month of inspection" was necessarily substituted for "age of residue."

TABLE III
AUTAUGA AREA INSPECTIONS

Distribution of Houses by Fly Density Groups and Age of Residue for 690 Chlordane* House Inspections							
Distribution of Houses by Fly Density Groups							
Age of Residue (Months)	0	1-10	11-25	26-50	51-100	101-150	Over 150
0-1	39	66	24	28	20	3	
1-2	1	20	42	60	41	16	
2-3		17	71	65	18	9	
3-4		4	52	77	16	1	
Total	40	107	189	230	95	29	
Percent of Total	5.80	15.50	27.40	33.33	13.76	4.21	0.00

*See footnote, Table I, chlordane inspections.

Distribution of Houses by Fly Density Groups and Age of Residue for 690 DDT* House Inspections							
Distribution of Houses by Fly Density Groups							
Age of Residue (Months)	0	1-10	11-25	26-50	51-100	101-150	Over 150
0-1	40	67	26	19	20	8	
1-2		19	34	69	46	12	
2-3		29	51	66	30	4	
3-4		5	47	85	10	3	
Total	40	120	158	239	106	27	
Percent of Total	5.80	17.39	22.90	34.65	15.35	3.91	0.00

*See footnote, Table I, DDT inspections.

TABLE IV
CRENSHAW AREA INSPECTIONS

Distribution of Houses by Fly Density Groups and Age of Residue for 690 Chlordane* House Inspections							
Distribution of Houses by Fly Density Groups							
Age of Residue (Months)	0	1-10	11-25	26-50	51-100	101-150	Over 150
0-1	26	93	19	23	17	2	
1-2		46	48	51	34		1
2-3		24	46	58	43	5	4
3-4		10	35	63	39		3
Total	26	173	148	195	133	7	8
Percent of Total	3.77	25.07	21.45	28.26	19.28	1.01	1.16

*See footnote, Table II, chlordane inspections.

Distribution of Houses by Fly Density Groups and Age of Residue for 690 DDT* House Inspections							
Distribution of Houses by Fly Density Groups							
Age of Residue (Months)	0	1-10	11-25	26-50	51-100	101-150	Over 150
0-1	20	92	26	21	14	6	1
1-2		13	32	59	56	12	8
2-3		16	43	77	38	6	
3-4		5	40	72	30	3	
Total	20	126	141	229	138	27	9
Percent of Total	2.90	18.26	20.44	33.19	20.00	3.91	1.30

*See footnote, Table I, DDT inspections.

TABLE V
UNSPRAYED INSPECTIONS

Monthly and Seasonal Distribution of Houses by Fly Density Groups for 436 Unsprayed House Inspections In Autauga Area							
Distribution of Houses by Fly Density Groups							
Month	0	1-10	11-25	26-50	51-100	101-150	Over 150
April	1	25	16	9	9		
May		10	18	17	25	4	2
June				3	13	16	28
July				14	28	6	12
August			2	10	23	15	10
September			3	9	29	11	8
October		1	15	19	18	5	2
Total	1	36	54	81	145	57	62
Percent of Total	0.23	8.26	12.38	18.58	33.26	13.07	14.22

Monthly and Seasonal Distribution of Houses by Fly Density Groups for 420 Unsprayed House Inspections In Crenshaw Area							
Distribution of Houses by Fly Density Groups							
Month	0	1-10	11-25	26-50	51-100	101-150	Over 150
April		28	15	13	3	1	
May		20	21	8	10	1	
June			1	4	25	14	16
July				9	33	10	8
August			3	11	31	10	5
September		4	11	19	17	8	1
October		1	11	27	17	3	1
Total	0	53	63	91	136	47	31
Percent of Total	0.00	12.62	14.76	21.67	32.38	11.19	7.38

The data shown in Tables III, IV, and V are presented chiefly to illustrate the facts that (1) a considerably greater percentage of sprayed houses than unsprayed houses fall in the lower fly-count groups, (2) a proportionately lower percentage of sprayed houses than unsprayed houses are contained in the higher fly-count groups, and (3) use of DDT alone is practically as efficient in fly control as DDT supplemented by chlordane. If the data for both the Autauga and Crenshaw Areas are combined and averaged, it is found that 49.49% of the chlordane houses and 43.85% of the DDT houses had from none to twenty-five flies per high-count room, but that only 24.07% of the unsprayed houses were in this lower group. It is also observed that only 19.71% of the chlordane houses and 22.24% of the DDT houses had over fifty flies per high-count room but that 55.84% of the unsprayed houses were in this higher group.

Analysis of the results obtained in the 1950 experimental spray project in Alabama indicates that (1) sprayed houses have decidedly fewer flies than unsprayed houses, and (2) a partial DDT spray supplemented by a partial chlordane spray offers no appreciable advantage over DDT spray alone in control of houseflies.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR SEPTEMBER 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During September 1950			September Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	7346	**	**	29.2	30.4	34.1
Total stillbirths	193	**	**	26.3	27.2	13.2
Deaths, stillbirths excluded	2130	1217	913	8.5	8.0	8.0
Infant deaths:						
under one year	256	125	131	34.8	34.4	30.3
under one month	189	94	95	25.7	24.7	21.5
Cause of Death						
Tuberculosis, 001-019	64	22	42	29.5	24.0	26.9
Syphilis, 020-029	9	2	7	3.6	6.0	7.6
Typhoid and para- typhoid, 040, 041						0.4
Dysentery, 045-048					2.0	***
Diphtheria, 055	4	3	1	1.6	1.2	2.0
Whooping cough, 056	5	1	4	2.0	0.8	2.0
Meningococcal infec- tions, 057					0.8	2.4
Poliomyelitis, 080, 081	3	3		1.2	0.8	1.2
Encephalitis, 082, 083						0.4
Typhus fever, 100-103						2.0
Malaria, 110-117	1		1	0.4	0.8	1.6
Malignant neoplasms, 140-200, 202, 203†	247	168	79	98.3	80.6	88.2
Diabetes mellitus, 260	19	12	7	7.6	10.4	12.4
Pellagra, 281	3	1	2	1.2	1.6	0.8
Vascular lesions of central nervous system, 330-334	234	129	105	93.1	89.8	79.8
Other diseases of nervous system, 300-318, 340-398	30	18	12	11.9	10.8	8.4
Rheumatic fever, 400- 402	3	1	2	1.2	1.6	0.8
Diseases of the heart, 410-443	640	400	240	254.6	227.2	196.1
Diseases of the arteries, 450-456	26	16	10	10.3	11.2	7.2
Other disease of the circulatory system 444-447, 460-468	30	15	15	11.9	10.4	2.8
Influenza, 480-483	6	3	3	2.4	1.2	2.8
Pneumonia, 490-493	58	26	32	23.1	18.4	23.7
Bronchitis, 500-502	5	4	1	2.0	0.8	2.0
Appendicitis, 550-553	8	3	5	3.2	3.6	2.8
Intestinal obstruction and hernia, 560, 561, 570	12	10	2	4.8	5.6	7.2
Gastro-enteritis and colitis (under 2) 571.0, 764	19	8	11	7.6	11.2	10.4
Cirrhosis of liver, 581	19	14	5	7.6	5.2	4.8
Diseases of pregnancy and childbirth, 640-689	16	8	8	21.2	15.4	17.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	2	2		2.6	2.6	1.2
Congenital malforma- tions, 750-759	23	19	4	3.1	3.6	4.4
Accidental deaths, total, 800-962	160	105	55	63.7	49.7	48.1
Motor vehicle acci- dents, 810-835, 960	68	51	17	27.1	25.6	17.6
All other defined causes	404	202	202	160.7	156.3	184.1
Ill-defined and un- known causes, 780, 793, 795	82	24	58	32.6	52.5	54.1

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the September report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

The Alcoholic—To be able to help the alcoholic, how shall we approach him? He must gain a thorough understanding and insight of himself as a person and of his particular situation in life. By what means does the alcoholic get this knowledge of himself? Much of it he consciously knows, some he will admit, but a great deal of it he denies, and much of the material is buried in his subconscious mind. This knowledge can often be brought to the surface by various psychiatric approaches, psychoanalysis, mental catharsis, hypnosis, narcoanalysis, and others. He must be completely sincere in his desire to stop drinking and must admit to himself, to his family, and to his physician that alcohol is a problem to him and one that he is unable to control. He must clearly recognize that what is food for some is poison and a pernicious drug for him, and that alcohol, at all times and under all conditions, produces unhappiness for him. The alcoholic must know that the motive behind his drinking is some form of self-expression, some desire to gratify an immature craving for attention, or a desire to escape from an unpleasant reality in order to get rid of a disagreeable state of mind. He must be convinced that any reasonable and sincere person who is willing to make a sustained effort for a sufficient length of time is capable of living without alcohol. He must resolve to tell the truth to his family and to his physician without waiting to be asked, and he must be equally honest with himself. The alcoholic having above average intelligence should realize from his past experience that drinking means a failure in life, whereas abstinence would likely mean success. He must be impressed with the knowledge that his real goal in life is success, efficiency, happiness and contentment, and that in his case his goal cannot be reached without abstinence. If he is able to stop drinking he must not regard himself as a hero or martyr and make unreasonable demands on his family to gratify his every wish. He should be tolerant of others who drink moderately or excessively and not shun those friends who do imbibe socially. Many alcoholics who stop drinking avoid their friends who do drink moderately and appear to be ashamed to admit that they are unable to take a drink, and they may feel self-conscious in the presence of their friends because they are unable to do so. On the other hand the opposite is quite true. Most moderate drinkers respect a person all the more who abstains either because he is unable to handle whisky or because he does not like it. The alcoholic should be taught to take his life "in stride," to accept without too much elation on the one hand and without too much depression on the other, for the reason that unpleasant experiences can serve as a good excuse to take a drink and successes may do the same. It is easy for an alcoholic to become discouraged early in his fight against the habit, and even though he may "stump his toe a time or two" there is not sufficient reason to feel that the cause is hopeless. Many alcoholics get a sense of security in the early period of their reorganization when the premature feelings of victory occur.—*Gayle and Foster, M. Ann. District of Columbia, Jan. '51.*

AMERICAN MEDICAL ASSOCIATION NEWS

URGES IMMEDIATE FIRST-AID TRAINING IN CARE OF ATOMIC BOMB CASUALTIES

Immediate training of large numbers of physicians or the public, or both, to care for atomic bomb casualties is urged by Dr. Everett I. Evans of Richmond, Va., member of the National Research Council's Committee on Atomic Casualties.

"If any large American city suffers atomic bomb attack the numbers of burn casualties will tax all preparations authorities are likely to be able to provide," Dr. Evans pointed out in a recent article in the *Journal of the American Medical Association*.

Dr. Evans is professor of surgery and director of the surgical laboratories at the Medical College of Virginia; surgical consultant to the Atomic Bomb Casualty Commission (Far East Command), Tokyo, Japan; chairman of the National Research Council's Subcommittee on Burns, and a member of the council's Committee on Surgery.

It is now well known that the temperature in the immediate vicinity of an atomic bomb burst may rise to several million degrees, and that even in the "outer zone" radiant heat is dissipated in such large amounts that severe burns result, Dr. Evans said.

"A disturbing feature of all disaster planning for burn care is the seeming complexity of this care even when it is reduced to the barest essentials," he continued. "More disturbing is the plain truth that so few physicians and fewer lay persons are trained in even the simplest methods of burn care.

"One can only conclude that unless proper training (along the simplest lines) of large numbers of physicians and/or the public in burn therapy is instituted at once the handling of large numbers of burn casualties after bomb attack on any of our cities must necessarily end in complete chaos and panic, with the accompanying inexcusable loss of many lives which otherwise might have been saved.

"The type of trained personnel required for adequate burn care will vary according to the severity of burn to be treated. In the outer zone, the burns may involve mainly the exposed surfaces of hands and face unless they are secondary to ordinary flame.

Treatment of such burns can properly be delegated to lay persons. A simple but effective method of treatment to reduce pain and aimed at prevention of infection of burned parts can easily be taught. Training for large numbers of first aid workers requires relatively little effort and would be highly effective.

"In the intermediate zone, more highly trained and larger numbers of persons will obviously be required. Physicians trained in the therapy of shock and application of a dressing will be needed in large numbers.

"In the zone nearest the bomb burst havoc will prevail. Planning for care of the survivors in this zone must be boldly realistic, lest medical efforts completely lose their effectiveness.

"Any calculation, conservative or otherwise, of the numbers of burn casualties to be expected in atomic attack results in requirements for adequate reserves of plasma and/or whole blood in such large amounts as to make it almost out of question ever to expect such supply for immediate delivery to a stricken city. For this reason alone I consider it imperative that search for a safe, effective, easily stored plasma substitute be started at once."

CYTOLOGICAL EXAMINATION REVEALS EARLY UTERINE CANCERS

Microscopic studies of smears taken directly from the uterine cervix and cervical canal are extremely useful in detecting early uterine cancer in women, according to two Cleveland physicians.

Drs. James W. Reagan and R. T. Schmidt, University Hospitals of Cleveland, report on the effectiveness of this so-called cytological technic in a recent issue of the *Journal of the American Medical Association*.

In a controlled series of tests, specimens taken from 108 proved uterine cancer patients were examined by this technic. Affirmative results were reported by Drs. Reagan and Schmidt in 103 of the 108 proved cases.

The accuracy and effectiveness of this method require a highly skilled microscopist trained in cell research.

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Dr. Charles A. Thigpen at Eighty-Five

The eighty-fifth birthday of Dr. Charles A. Thigpen of Montgomery was the occasion for an appreciation dinner tendered him in Birmingham on December 19th, 1950. Dr. Alston Callahan presided. Addresses were delivered by Dr. John M. Gallalee, Dr. Tinsley Harrison, Dr. Seale Harris, Mr. Thomas W. Martin, Mr. Robert I. Ingalls, Sr., Mr. Robert Bohannon, President of Alabama Sight Conservation, and Dr. John Bryan, President of the Alabama Institute for Deaf and Blind.

Dr. Thigpen's address in response was the outstanding feature of the evening. He related briefly the story of his fifty-eight years in the practice of ophthalmology. The high ideals of medical practice and the philosophy of life of Alabama's greatest, best-beloved and most successful doctor, so modestly and beautifully expressed in this address, should prove an inspiration to young physicians in particular. Dr. Thigpen paid a beautiful and deserved tribute to his devoted friend, Dr. W. Groce Harrison, Birmingham's distinguished ophthalmologist and medical historian, now retired. This heartfelt expression of appreciation for a friend was typical of Charlie Thigpen who has never missed an opportunity to encourage young men in their aspirations. Those who had the privilege of hearing Dr. Thigpen's address felt that it should be published where it could be read by every physician in Alabama. It therefore is submitted by Birmingham physicians for publication in the Journal of the Medical Association of the State of Alabama. Dr. Thigpen reluctantly agreed to its publication.

Dr. Thigpen's Address

Dr. Gallalee, Dean Harrison, Dr. Callahan and Friends:

I deeply appreciate the honor of being the guest of the Medical College of Alabama on the occasion of my eighty-fifth anniversary. I do not realize that I am the man you have been talking about this evening, nor that I have done anything out of the ordinary to merit such an honor, unless it be that I have been successful in covering up my shortcomings and fooling the people.

In June 1888, I was graduated from the Medical Department of Tulane University. I returned home to enter the practice of general medicine with my father at Greenville, Alabama. I thought then that my diploma was a guarantee that I knew everything about medicine and tried to impress that fact upon him on several occasions. He thought otherwise, and said that "he wanted me to practice with him just long enough to realize how little I knew, and then we would really begin the study of medicine." It did not require many months for me to realize how little I did know and I told him so. His reply was: "I was just waiting for you to say so and now we will begin again." Of the work I had done that year, what fascinated me most was the eye and its diseases, and so I selected that for my future work. After three years of study and work in the leading clinics and hospitals in America and Europe, I returned home and located at Montgomery and opened my office on the 26th day of October, 1892. On the 26th of October last, I celebrated my fifty-eighth anniversary in the practice of ophthalmology.

From the beginning, my ambition was to observe the Golden Rule, be of use to others, and earn my place in the world. My work has brought me in contact with many people, rich and poor, and I made their troubles mine, and the quality of service rendered them was the same whether the patient was a millionaire or pauper, and placed service before financial gain. I have regulated my charges according to their ability to pay and the amount of good done. If I did no good, I charged nothing, and many times I have returned the money the poor have paid when I learned of their circumstances, and if there ever was a charge made that was not satisfactory, it was not known to me. In all my contacts with my patients, there has never been any unpleasantness or misunderstanding. Those who were my patients when I began the practice of medicine and are still living are still my patients. Likewise, my medical friends with whom I began, and who are still living, are still my friends; and it can never be said that I ever took another doctor's patient while under his care, but have always tried to patch the difference between the doctor and the patient and return him to him, and have written his doctor to that effect. Among the patients I have treated there were many blind ones, and for them I have followed the precepts of the Great Creator, when, in the beginning of the world, he said, "Let there be light"; and it is a great satisfaction to me that I have been able to lead many blind people out of darkness into light.

Among the many happy experiences of my professional life, there were no happier ones than my work at the School for the Blind in Talladega. There were many blind children there who had never had the advantage of an eye examination. Among them were many cases of congenital cataract, children who had never seen mother or father. Operations done upon their eyes obtained useful vision. On one occasion, during one of my visits there, the Superintendent informed me that the School had a new physician, and said, "I will call him and tell him that you are here." In a few minutes there appeared a young, quiet, intelligent physician whom I met, learned to know and love. He proved to be a valuable assistant in the care of these unfortunate

children, and became inspired by the results of the work I was doing. Finally he told me, on one of my visits, that he had decided to take up the study of the eye. I advised him to do so, knowing that he had a natural aptitude for the work, and directed him how to begin. After two years of close application in the clinics of America and Europe, he became capable and ready to begin work. He asked me where he should locate. My reply was "Birmingham." There he went and placed his foot upon the first round of the ladder from whence he rapidly climbed to the top and became known as one of the leading specialists of the South. Because of his overwork, industry and devotion to his patients, his health was wrecked, much to the regret of his friends and patients. That man is the father of the distinguished Dean of the Medical College of Alabama.

I feel that I have lived in an era, the most important in the history of mankind, the era of electricity, telephone, radio, television, the x-ray, automobile and airplane, and many other wonderful inventions which are blessings to humanity—the transition of medicine of horse and buggy days to that of modern scientific medicine, the birth of the laboratory, the discovery of bacteria, aseptic surgery and preventive medicine, the conquest of yellow fever, malaria and other infectious and fatal diseases.

In spite of sorrows, disappointments and regrets, I have had a wonderful life. It has been an ever-changing panorama from its beginning, and has never become monotonous to me.

And now, my friends, I wish to thank you, one and all, for coming here this evening and making this really a happy birthday for me. I know not how many more birthdays may be allotted to me. I have waded out deep up to my neck into the sea of time, my head is still above the water and I want to live on—

"In deeds not years,
In thoughts, not breaths,
In feelings, not in figures on the dial;
He most lives who thinks most,
Feels noblest, acts best."

I thank you.

CLINICAL EFFECTS OF ACTH AND CORTISONE IN CERTAIN DISEASES

HOWARD L. HOLLEY, M. D.
Birmingham, Alabama

It now has been almost 100 years since Thomas Addison so accurately described the disease syndrome associated with adrenal cortical insufficiency. During this intervening century a great deal has been learned about the adrenal cortex and its function. Unfortunately, we are just now belatedly using some of the fruits of this century of research.

Although we have known for a long time that the body deprived of the adrenal cortex loses its ability to resist undue stress, we did not know by what means this was brought about. In view of this fact, interest has always remained high in isolating and determining the action of the various adrenal hormones inasmuch as it was believed that these might offer the answer.

The first cortical hormone identified and synthesized was desoxycorticosterone. This substance has been widely used for the treatment of adrenal cortex insufficiency for many years but its real significance in electrolyte metabolism has only been recently recognized.

The relationship of these compounds to disease syndromes has been suggested over and over. These observations have been based upon the known fact that patients with rheumatoid arthritis often have a remarkable remission soon after a surgical procedure, after pregnancy, or during a bout of jaundice. These facts are interesting in that nature can heal these badly damaged joints where medical science has failed so miserably. In fact, physicians made different attempts to apply this knowledge to the therapy of this disease. Pregnant women's plasma has been used in rheumatoid arthritis with some good results. Attempts were made to give patients with arthritis mild jaundice. However, all proved to be of only temporary therapeutic usefulness.

This, and the two papers that follow, constituted a symposium on the subject presented at the Second Annual Seminar of the Alabama Academy of General Practice.

From the Department of Medicine, Medical College of Alabama.

It was Hans Selye who postulated the relationship between the adrenal gland and certain diseases.¹ His "alarm reaction" theory is now history. In fact, in nearly every respect his remarkable postulations have been proven correct by subsequent work. He was able to produce changes in animals that were indistinguishable from a whole host of diseases that affect the collagen matrix in the body. Among these were rheumatoid arthritis, rheumatic fever, polyarteritis nodosa and similar diseases.

Just what this remarkable hypothesis foretold was heralded in 1948 by the announcement of Hench and co-workers that they had been able to produce a remarkable remission in rheumatoid arthritis by the use of one of the adrenal cortex hormones, cortisone, originally called "Compound E."² Some time earlier the adrenotropic hormone that is produced by the anteropituitary had been isolated. It was then found that this drug had similar action upon disease states as that of cortisone.³ This drug has been denoted ACTH, which is an abbreviation for adrenocorticotrophic hormone.

Here then was offered to clinicians two types of hormonal drugs that have similar action. Fortunately, these hormones are being produced at a very rapid rate and are becoming more readily available for use by clinicians. It, therefore, seems timely to review some of the indications and experiences with such therapy.

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RHEUMATOID ARTHRITIS

We have now treated a total of approximately 35 cases of rheumatoid arthritis and find that we can make certain observations.

There are several different forms of the disease: acute, subacute and chronic. Those patients that have the chronic type, i. e., those in which fibrositis is a prominent feature, have been noted to have the best response to the drugs. In this regard it should be emphasized that maximal results from hormonal therapy cannot be expected in long-standing processes in which ankylosis has become a prominent feature. No resolution of fused joints occurs and no regeneration of atrophied muscle tissue can be expected.

The acute form of the disease responds well to this type of therapy. There is loss of pain and tenderness. Signs of inflammation recede quickly, and motion is restored to the affected joint.

The subacute form responds least well to the drugs. Hydroarthrosis associated with affected joints resolves slowly or not at all. In one of our cases, fluid actually developed during therapy, due, no doubt, to increased motion of the affected joint. This offers proof to the postulation that these drugs merely attenuate the arthritis process, and it is rarely, if ever, entirely eliminated.

In cases of Reiter's syndrome, characterized by urethritis, arthritis and conjunctivitis, there is little or no response to regular dosage and only partial remission of symptoms when higher dosages are used. Therefore, we feel the drugs are not warranted in this disease state.

Those cases of arthritis with involvement of the spine, spondylitis, in which pain and muscle spasm play a large part in the disability, apparently have good symptomatic results. This is evidenced by a return of motion and disappearance of pain and spasm. As in other joints, fixation and calcification are not altered by the treatment.

In Felty's syndrome (see Fig. 1), characterized by splenomegaly, lymphadenopathy, leukopenia and arthritis, resolution of the process is rapid, and the blood count consistently returns to normal. The spleen becomes smaller and the lymphadenopathy shows noticeable remission.

There is no way to predict just what re-

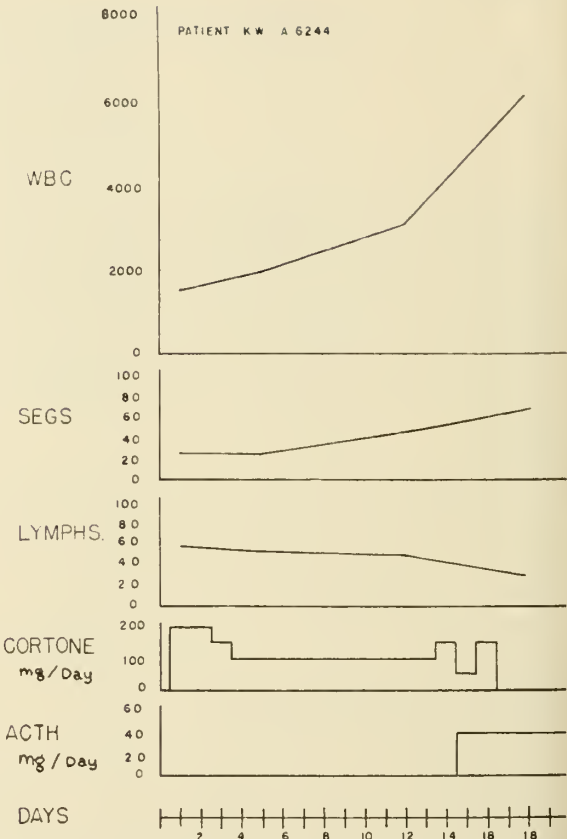


Fig. 1. Patient with Felty's syndrome showing hematologic response to cortisone therapy.

sults one may expect from such therapy, as each patient responds differently to the drug. This is reemphasized when one attempts to ascertain the proper therapeutic and maintenance dosage.

After the drug is first administered the effect is usually noted within the first 24 to 48 hours, depending, of course, on the dosage and absorption. At first there is marked improvement in the patient's ability to use his joints, without any objective changes in the joints themselves. This suggests that there must be a much greater element of spasm in the incapacitation produced by rheumatoid arthritis than had previously been appreciated. Then, after four or five days of therapy, there is convincing objective improvement in the joints themselves, but lasting with some variation, depending on the dosage and duration of administration. The process, however, is not completely obliterated because most often there is not a complete disappearance of the lesions. Consistently, with discontinuance of these agents, there is fairly rapid reappear-

ance of muscle tenderness and spasm, and the clinical manifestations of the disease seem to reappear in the order of their disappearance.

Not all the patients have dramatic remissions occurring in the first two or three days. In some the improvement is more gradual; and even though adequate amounts of the drugs are being administered, as evidenced by the fall in the absolute eosinophil count, these patients may require from seven to ten days for full remission of symptoms to be accomplished. Then, in most all the patients, after symptomatic relief is attained, improvement may be marked for a period of time, the patients regaining in large part the use of the affected parts. No doubt, a part of this improvement is the euphoria, or feeling of well-being, that is associated with the administration of these hormones. Most all rheumatoid arthritic victims have some form of depression, due, no doubt, to continued pain and the poor prognostic outlook consistent with the disease state. The drugs apparently relieve this depression and, together with relief of pain, offer these unfortunate individuals a better outlook for the first time.

Once the maintenance dose has been determined and the drug continued for a period of time, the patient may begin to note that there is a waning of the earlier exhilaration. He may have a return of some of his old symptoms. Any attempt to increase dosage at this time usually brings on overstimulation which may be evidenced by electrolyte imbalance.

The onset of an intercurrent infection, especially one of the upper respiratory tract, causes a recurrence of the old arthritic symptoms, even though the proper maintenance dose is being continued. In this condition it may be advisable to increase temporarily the dosage of the drug until symptoms of the added infection have disappeared.

The occurrence of osteoporosis during long term therapy with these drugs may offer a problem. This occurrence is a manifestation of the nitrogen imbalance. With this process comes many annoying symptoms. Pain in the back and limbs, usually not associated with joints, is a common finding. This symptom is not improved by in-

creasing the ACTH or cortisone therapy. Actual spontaneous compression fractures of the vertebra have occurred in patients under long continued treatment. The use of androgen therapy will help prevent this adverse reaction, and it seems warranted to use this drug in every case on long continued ACTH or cortisone dosage.

ACUTE RHEUMATIC FEVER

Probably in no disease have more optimistic promises of good therapeutic results been made as in acute rheumatic fever.⁴ In this disease syndrome the damage to the heart is for the most part proportional to the length and number of attacks of the disease. Therefore, any means to shorten or prevent attacks would decrease the possibility of the permanent crippling effect. These drugs now furnish us with a means of altering the course of this disease. As in similar diseases, however, the best results have been seen in early stages of the disease, preferably during the first or second attack. Unfortunately, though, it is this stage that is difficult to recognize, and, therefore, is seen with less frequency than when heart damage becomes manifest.

The therapeutic usefulness of these drugs is definitely limited in chronic recurrent attacks associated with heart damage, for in these cases of active, long-standing disease the management of electrolyte and fluid retention may present a problem. In patients with severely damaged hearts that are in congestive failure, the administration of the drug may serve to increase the electrolyte imbalance. Then, again, the disease is very prone to become reactivated as soon as the drug has been discontinued, and any attempt to institute prolonged maintenance therapy may cause evidence of fluid retention. Therefore, we do not feel that the drug is indicated in such cases. In fact, it may be contraindicated in those showing evidences of failure. It should be stated, however, that there is always the chance that any improvement of the disease process may promote better heart action with resultant im-

4. Hench, Philip S.; Slocumb, Charles H.; Barnes, Arlie R.; Smith, Harry L.; Polly, Howard F., and Kendall, Edward C.: The Effects of the Adrenal Cortical Hormone (17-hydroxy-11 dehydrocorticosterone: Compound E) on the Acute Phase of Rheumatic Fever, Preliminary Report, Proc. Staff Meet., Mayo Clinic, Vol. 24, No. 11, May 25, 1949.

provement in compensation. Therefore, in selected cases, it may be worthy of a trial.

We have treated a total of 10 cases. Unfortunately, most of these cases have been chronic active processes or recurrent cases. In some of the latter, remissions have been difficult to obtain, while in one the onset of congestive failure forced discontinuance of the drug. Contrary to published reports, sedimentation rates have failed to return to normal promptly, though clinical symptoms of the disease have abated. Long continued therapy with adequate therapeutic doses may be necessary to cause a laboratory remission as well as a clinical one. The fever promptly remits, heart action may continue rapid, but gradually becomes slower as the disease process abates. After discontinuance of the drug, careful observation may be necessary to recognize early relapse. This complication unfortunately is very common.

In this disease we may conclude that the drug offers us a means of tempering the destructive process, even though it may be temporary in nature, and should be tried in most patients with signs of heart failure.

DISSEMINATED LUPUS ERYTHEMATOSUS

Lupus erythematosus presents a difficult problem, although the results of ACTH and cortisone administration may be both pronounced and rapid. The real problem in this syndrome is that this disease appears to require a larger dose for a clinical and laboratory therapeutic effect than in most diseases. However, this may be because the majority of cases we have treated to date have been either very severely ill or even terminal before therapy has been initiated. It may be well that earlier, less severe cases can be brought into a remission in a shorter period of time with much smaller doses.

We have treated five patients of the disseminated type of lupus erythematosus. All of our patients have responded to the therapy. The fever abates, the blood count returns to normal, and the skin lesions disappear, but the renal lesions, as evidenced by the urinary findings, remain unchanged. (Fig. 2.) Some patients may relapse promptly after discontinuance of the drug, while others have achieved what appears to be a temporary remission.

POLYARTERITIS NODOSA

We do not recommend ACTH and cortisone in the treatment of polyarteritis nodosa

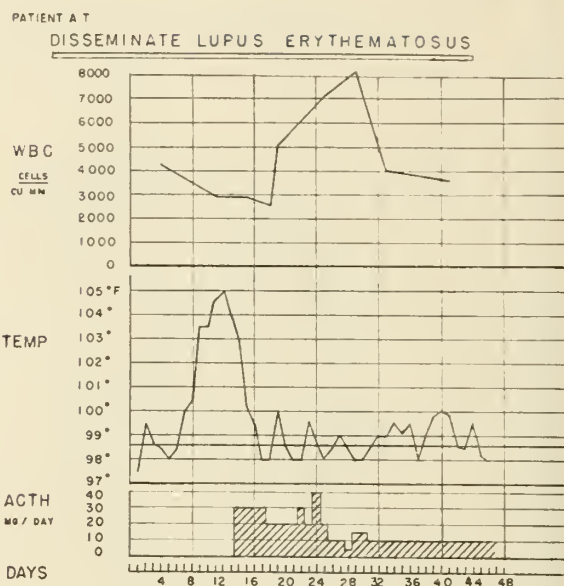


Fig. 2. A patient with disseminated lupus erythematosus treated with ACTH, showing excellent hematologic response associated with decline in febrile reaction.

with the possible exception of very early, short-duration cases. Although remissions have been obtained after therapy the possibility of a therapeutic paradox should always be kept in mind. Severe cases of cardiac embarrassment have been reported to develop secondary to occlusion of the vessel, no doubt due to the rapidly healing process under influence of hormonal therapy.⁵ We have observed a fatal case of mesenteric vessel occlusion with resultant gangrene of the bowel, in a case treated with cortisone.⁶ This unfortunate result was most likely due to the occlusion of the mesenteric artery with the rapidly healing process.

DISEASES DUE TO HYPERSENSITIVITY STATES

Bronchial Asthma: Astounding results have been attained in chronic intractable asthma and status asthmaticus, but unfortunately improvement has been only temporary, consistent merely upon administration of adequate amounts of the drug.⁷ We have treated three cases of status asthmaticus with good results.

5. ACTH, Armour Laboratories, Chicago, Illinois, 1950.

6. Personal communication, Dr. Arthur M. Freeman, Birmingham, Alabama.

7. Rose, B.; Pare, J. A. P.; Pump, K., and Standford, R. L.: Preliminary Report on Adrenocorticotrophic Hormone (ACTH) in Asthma, *Canad. M. A. J.* 62: 6-9, 1950.

Relief from this state is sometimes noticeable within a few hours after beginning the therapy and complete relief is most always attained with proper therapy.

Maintenance therapy, using small doses, has been successful in some cases but certainly not all. The "rebound phenomenon," characterized by a return of the symptoms on the same maintenance dosage, is often seen in asthma therapy. This phenomenon is supposedly due to a cessation or temporary suppression of secretion of the stimulating hormones of the adrenal cortex. This is brought about by the presence of an excessive amount of the hormone in the blood. Therefore, the anterior pituitary ceases to function and no stimulation of the adrenal cortex occurs.

Certainly the drug offers at least a temporary relief from the severe and frightening attacks of status asthmaticus, bringing about almost immediate relief, but one questions the effectiveness of prolonged maintenance therapy in long-standing chronic cases because of the continuous high dosage required to effect prolonged remission.

Drug Sensitivities: Severe and persistent drug sensitivity reactions have responded well to hormonal therapy.⁸ This drug has been most effective in relieving persistent symptoms of such a reaction. Penicillin drug reactions have had the most consistently good results, no doubt due to the fairly rapid elimination of the causative agent from the body. Though some relapse promptly after discontinuing therapy, a striking and early improvement was noted in all of our cases. In those cases with relapses repeated courses of therapy have been effective. Tapering the dose is usually helpful in preventing recurrences. Maintenance therapy is not necessary as a rule and, when indicated, a short term of administration usually suffices.

PSORIATIC ARTHRITIS

Psoriasis and psoriatic arthritis may receive at least a temporary relief from this type of therapy.⁵ This disease appears to require much larger doses administered over a longer period of time in order to effect re-

missions. Then, also, there is a lack of complete reversal of the lesions in most patients.

On the basis of experience to date, it would appear that cases of long-standing disease are not satisfactory subjects for treatment with ACTH and cortisone. Administration of large doses over such a long period of time to maintain these patients in remission makes undesirable side effects more likely. However, severe acute forms of this disease of relatively short duration may offer better prospect of remission, and the drug may be warranted in these patients.

ULCERATIVE COLITIS

In this severe and disabling disease rapid relief of symptoms may be obtained from hormonal therapy.⁹ However, there appears to be little or no change in the damaged intestinal mucosa after treatment with these drugs. Therefore, in chronic diseases of long duration, symptomatic relief is all that can be expected and it appears that in such instances this type of therapy is not indicated. In earlier cases, especially those in which the intestinal mucosa is not so seriously damaged, it seems worthy of a trial.

NEPHROTIC SYNDROME

Although these drugs are known to increase sodium and water retention, they appear to have affected at least temporary remissions in some patients with the nephrotic syndrome.¹⁰

The administration of the drugs to these patients appears to cause a retention of fluids and electrolytes at first, as evidenced by the increasing edema. However, marked diuresis usually ensues when the drug is discontinued. This is followed by clinical improvement.

Not all of these patients respond well to this type of therapy. Older patients with long-standing processes and an underlying renal damage do not respond well. One of our patients who had a nephrotic syndrome

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associated with glomerulonephritis was apparently made worse by the drug.¹¹ The edema increased even though the drug was discontinued, and diuresis did not occur.

In general, younger children without evidence of other renal damage have responded better than older patients. These children have gone into an apparently complete clinical and laboratory remission of the disease. Therefore, it seems worthy of a trial in patients with nephrosis not associated with evidences of renal disease.

METABOLIC DISEASES

Gout: Although we have not treated any patients with this metabolic disorder, the use of ACTH in combination with colchicine appears to be very effective in the treatment of an acute attack of gout.⁸

Hypoglycemia: Individuals that have idiopathic, spontaneous hypoglycemia apparently have remissions of symptoms under influence of the drugs.⁵ Apparently, the action of these drugs in inhibition of insulin would make a supply of glucose more readily available. It seems doubtful that continued treatment would be indicated in patients with only mild symptoms of this disorder.

ENDOCRINE DYSFUNCTIONS

Addison's Disease: Oral administration of cortisone makes control of this abnormality much simpler. It would seem that this drug replaces very effectively the deficiencies arising from such a disease state.

Panhypopituitarism: Though this condition is encountered rarely, its complete control can apparently be effected by the use of ACTH or cortisone.⁵ Although ACTH is the ideal drug its administration is much more technically difficult than cortisone. Cortisone replaces only the deficiencies associated with an inactive adrenal gland. However, symptoms of such a deficiency are often seen in these patients.

Anorexia Nervosa: Patients afflicted with anorexia nervosa are affected favorably by these drugs. Almost immediately, there is a change in the mental status, followed shortly by an increase in the appetite. After only a short course of therapy there can be noted marked change in these individuals. They have a better outlook on life; they eat heartily and begin gaining weight. Although they may relapse after

therapy is discontinued, the drugs seem indicated in the treatment.

Acute Alcoholism: These drugs have brought about prompt and consistent remission of symptoms in individuals suffering from an excessive intake of ethyl alcohol.⁵ The mental symptoms disappear and the anorexia ceases. These patients require only a short course of therapy. The drugs are probably indicated in all of these cases.

SUMMARY AND CONCLUSIONS

In this brief resume' we have attempted to present to you some observations and conclusions that we have reached after using cortisone and ACTH in certain disease states. Unfortunately, these are only a few of the many diseases that have been subjected to this new mode of therapy. Some have had good results, others equivocal, while still others have not responded at all. Many years will have to elapse before a full evaluation of this type of therapy can be realized. However it may be fair to state that ACTH and cortisone will probably not be used for these various diseases in years to come. For diseases that require short-term therapy they may find a better place.

It appears futile to think and talk about these drugs in terms of practical long-term therapy. The expense is a factor that puts them in an impractical range, i. e., if they are to be used for any length of time. Then, we must also consider that their effects on chronic diseases, such as rheumatoid arthritis, last only as long as the drug is continued.

Even if the continuous use of the drug were practical, we still have the problem of untoward effects. They may outweigh the clinical response.

The possibility of permanent changes brought about by interruption of the normal endocrine system with the administration of these drugs is in the realm of possibility. The suppression, and possible atrophy, of the anterior pituitary and adrenal cortex has been shown to occur experimentally. Therefore, it is reasonable to assume that permanent changes may result. Many years will have to pass before adequate data have been accumulated.

On the other hand, short-term therapy for disease states may be life-saving. In these

11. Personal Communication, Dr. J. J. Keller, Tuscaloosa.

conditions the likelihood of occurrence of permanent damage is less likely.

Through these drugs we probably have a much clearer understanding of certain disease processes. These facts will result, no doubt, in the development of newer drugs that affect only one particular site in the

endocrine system without upsetting the whole balance. Such would be an ideal drug.

Note: We are indebted to Mrs. Lois T. Montgomery and Mr. Claude M. Holland, Jr., for their technical assistance in the preparation of this paper.

ACTH AND CORTISONE IN BLOOD DISORDERS AND RELATED NEOPLASTIC DISEASES

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During the early experimental studies of Thorn and his associates they clearly demonstrated that ACTH and cortisone affected the number of circulating eosinophils, and Dougherty and White demonstrated that increased adrenal cortical activity resulted in involution of normal lymphoid tissues. These experimental studies seemed to indicate that ACTH and cortisone might be effective therapeutic agents in the treatment of conditions characterized by lymphoid hyperplasia and in certain blood disorders. Preliminary observations reported by many clinical investigators have shown that these agents can be used effectively in a limited number of conditions but that so often the benefit is temporary. There is still much to be learned about therapeutic effectiveness of ACTH and cortisone in hemopoietic disorders.

The physiologic effects of adrenal cortical stimulation on normal circulating blood cells are as follows:

Hemopoietic System:

1. Eosinophils
Decrease in circulating eosinophils and can be used as a sensitive indicator of adequate stimulation.
2. Lymphocytes
The lymphocyte count is a less sensitive indicator but does decrease.
3. Granulocytes
These cells tend to increase during the period of adrenal cortical stimulation.
4. Erythrocytes
No effect on normal count.

Second part of a symposium on ACTH and cortisone presented at the Second Annual Postgraduate Seminar of the Alabama Academy of General Practice.

From the Department of Medicine, Medical College of Alabama.

5. Thrombocytes

Usually moderate increase in platelets.

The following blood disorders and related neoplastic diseases have shown a variable response to ACTH and cortisone.

Response In Various Diseases

Blood Disorders:

Acute leukemia.
Chronic leukemia.
Aplastic anemia.
Agranulocytosis.
Essential thrombocytopenic purpura.
Non-thrombocytopenic allergic purpura.
Acquired hemolytic jaundice.
Loeffler's syndrome.

Other Neoplastic Disorders:

Multiple myeloma.
Lymphosarcoma.
Hodgkin's disease.

In some cases of acute leukemia there is a temporary response as evidenced by significant clinical improvement and changes in the hemopoietic tissues. Several investigators have reported that about 50 per cent of the patients will go into complete temporary remissions. However, the period of remission varies considerably and refractoriness develops during repeated courses of this type of therapy. During the period of remission the blood picture appears normal.

The chronic leukemias in general do not show marked improvement in their blood pictures as is seen in some of the acute leukemias. Several reports indicate that both ACTH and cortisone may be of some temporary benefit in chronic lymphatic and chronic monocytic leukemia. Acute monocytic and chronic myelocytic leukemia have not responded significantly to this form of therapy.

Lymphosarcoma and Hodgkin's disease

will show a transient involution of the neoplastic masses but other types of lymphomas respond variably.

These therapeutic agents are quite helpful in the management of multiple myeloma since temporary clinical remissions can be produced in about one-half of the patients. There is usually a quick disappearance of pain and significant clinical improvement in those patients who do not experience remissions. The remissions appear to last longer than in the leukemias but, here again, relapses occur and they develop a refractoriness to this type of therapy.

The several preliminary reports regarding the effectiveness of ACTH and cortisone in the treatment of patients with essential thrombocytopenic purpura, allergic purpura, agranulocytosis, chronic hypoplastic anemia (aplastic anemia) and Loeffler's syndrome have been most encouraging. Several cases of acquired hemolytic jaundice have apparently gotten a good response but it is too early to make a full evaluation of the few patients treated.

A recent report by Cosgriff and associates seems to indicate that ACTH and cortisone alter the normal coagulation of blood. They noted a significant incidence of thromboembolic complications in a group of patients on this treatment and expressed the opinion that these therapeutic agents frequently produce a hypercoagulable state of blood coagulation. This complication has not occurred often in our group of patients.

It is evident that these hormones are helpful in the management of a few specific blood disorders and allied neoplastic diseases even though the effect is only temporary in most cases.

DOSE SCHEDULE

It appears that ACTH and cortisone produce the same general effect in blood disorders and certain neoplastic diseases. However, cortisone is preferable in most cases since it is now available in an effective oral preparation. In general, the same dose schedule is used in these disorders. If cortisone is to be used it is advisable to administer it by intramuscular injection for the first four days and then change to the oral preparation. After several weeks on therapy, and depending upon the clinical response, one must determine the minimal effective

maintenance dose. The dose should be decreased gradually, and brief rest periods are necessary if these hormones are used over a long period of time.

Most of the physiologic effects produced by ACTH and cortisone can be controlled without discontinuing therapy. These metabolic and hormonal effects are usually manifested by edema, alkalosis, hypochloremia, hypopotassemia, glycosuria, hyperglycemia and atrophy of tissues. However, there are several physiologic effects, such as significant hypertension, mental disturbances and certain infections, requiring cessation of hormone administration.

SUMMARY

The accumulated studies on ACTH and cortisone in the treatment of certain blood disorders and related neoplastic diseases indicate that in selected patients there will be a beneficial response.

About 50 per cent of the acute leukemias will go into a period of temporary remission but later become refractory to treatment. In chronic lymphocytic and monocytic leukemia there is also a temporary response but chronic myelocytic and acute monocytic show little response. There may be striking shrinkage of enlarged lymph nodes in the lymphomas but the clinical improvement is temporary. Clinical improvement is often seen in patients with multiple myeloma.

Both ACTH and cortisone produce striking results in some cases of essential thrombocytopenic purpura, allergic purpura, agranulocytosis, chronic hypoplastic anemia and Loeffler's syndrome.

The control of metabolic and hormonal effects of ACTH and cortisone are discussed.

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PHYSIOLOGIC EFFECTS, CONTRAINDICATIONS, DOSAGE, AND CONTROL OF ACTH AND CORTISONE THERAPY

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The apparent lack of relationship between some of the disorders favorably affected by ACTH and cortisone simply emphasizes the rudimentary state of our knowledge about this subject. For this reason it seems probable that current ideas will undergo gross change in the course of the next few years. However, these drugs are available. They are the only known effective therapeutic agents in some disorders. They may be lifesavers. Accordingly we should use each of these hormones in selected cases, but in using them we must remain constantly conscious that we are dealing with powerful and imperfectly understood materials. We should use them only on carefully selected cases and then with all appropriate precautions.

We do not yet know the mechanisms by which cortisone and ACTH affect such a wide variety of diseases favorably. We do know some of their physiology and this is important in considering contraindications, dosage schedules, and side effects. Very briefly, the known physiologic effects related to this hormone therapy are as follows:

The sole function of pituitary adrenocorticotrophic hormone (ACTH) is stimulation of the adrenal cortex. The material available

apparently stimulates the secretion of several adrenal cortical hormones of which cortisone or a cortisone-like material is but one. The effect of ACTH is therefore the sum of the effects of these hormones, their individual effects not being invariably separable.

Perhaps the most important physiologic side effect of this hormone therapy is on salt and water metabolism. These hormones lead to retention of sodium and water. This effect can produce rather serious results in patients with hypertension, actually or potentially decompensated cardiac patients, and those with impaired kidney function. It need not invariably contraindicate cortisone or ACTH therapy except perhaps in those patients who already have edema due to cardiac failure or otherwise due to salt retention. Those patients with any evidence of heart disease, hypertension, or lowered kidney function, but without preexisting failure must have a low sodium intake, should be weighed daily to detect subclinical fluid retention, and should have daily observation for clinical edema. Similar precaution in all patients is wise. Edema, if it occurs, can often be controlled with mercurial diuretics but if this is ineffective, continuation of therapy is definitely unwise. This cannot be over-emphasized. If it is ignored one may unexpectedly precipitate a situation that can lead to the patient's death.

Desoxycorticosterone, rather than cortisone, is probably the cortical hormone responsible for the changes in electrolytes.

Concluding part of symposium on ACTH and cortisone presented at the Second Annual Postgraduate Seminar of the Alabama Academy of General Practice.

This and the suppression of other cortical activity probably explain the paradox of occasional spontaneous remission in the edema with excretion of the retained salt and water despite continued cortisone therapy. It will explain the recent report that electrolyte changes are more pronounced on ACTH therapy than when cortisone is used.

Perhaps related to this effect on the salt and water metabolism is the occasional increase in blood pressure on this hormone therapy. It is unusual, but when it occurs it should serve as a danger signal and the treatment stopped if the diastolic pressure exceeds 100 mm. or if the already elevated diastolic pressure rises at all. There is apparently no way of predicting which cases will do this and patients on this therapy should have daily blood pressure observations at least during the initial phases of treatment.

ACTH and cortisone therapy is associated with increased excretion of potassium. On usual doses this is insufficient to produce symptoms of potassium deficiency, but serum potassium studies will show it as may the EKG. On larger or longer continued dosage the patient may complain of weakness as such a symptom, and the administration of one or two grams of potassium chloride three times daily is appropriate.

Perhaps the second most important side-action of cortisone or ACTH is a definite psychic effect in most patients. It most often consists in a mild euphoria which is quite desirable. However, there may be a more marked variation in mood, with hypomania, mild depression, or the development or exaggeration of various psychoneurotic states. More rarely the patient may become frankly psychotic. In general, the hormones tend to reproduce, often to an exaggerated degree, the same type of psychic response with which the patient has met previous stress. Patients who have had marked psychic manifestations in the past should probably not receive this form of therapy. All patients receiving it should be watched for these complications and if they are severe, the treatment should be stopped. The psychic aberrations will regress on cessation of therapy.

Cortisone, whether given as such or whether secreted by the adrenal after stimu-

lation by ACTH, apparently impairs carbohydrate metabolism by lessening the effect of insulin. This is not significant in non-diabetic patients. In them the usual doses produce only transient mild glycosuria and that only occasionally. Diabetic patients may require distinctly larger amounts of insulin, perhaps twice their usual amount. This need not be a contraindication to the use of these hormones but knowledge of the patient's carbohydrate tolerance is desirable before hormone treatment. Findings of potential or actual diabetes should not deter one from using the hormones, but should lead to more careful observation of the sugar metabolism during treatment. On withdrawal of therapy, sugar metabolism will return to its pretreatment status.

During cortisone or ACTH therapy there is increased breakdown of protein with increased nitrogen, uric acid and creatinine excretion. This process is relatively unimportant during short courses of therapy as the process reverts to normal afterwards. In long continued therapy there is destruction of general body tissues with the development of weakness due to definite muscle wasting. Administration of androgens, or less effectively, of estrogens, will lessen this nitrogen loss. A high protein diet will also lessen the negative balance.

On long continued or high dosage of cortisone therapy, there is abnormal deposition of fat with production of a "moonface" and "buffalo hump" or the obese trunk and neck characteristic of Cushing's syndrome. The "moon face" is the only one of these apt to appear on the usual therapeutic doses. The others may appear on higher or more prolonged doses. There is elevation of serum cholesterol that at least theoretically questions long continued use of these materials in diabetics or hypertensives with already elevated blood cholesterol values or patients with a history of localized effects of arteriosclerosis such as coronary occlusion. One can speculate on the possible effect of long continued hormone therapy on premature development of arteriosclerosis. There has been too little time for reports from investigators of this phase of the question. Acute effects on lipid metabolism will all revert on withdrawal of therapy.

Another side effect is the androgenic property of these hormones. Either form of the

therapy may produce amenorrhea, hirsutism and mild acne. Masculine voice changes and enlargement of the clitoris have not been observed. This side effect is not important if it is understood, but it probably contraindicates use of these materials when hirsutism or other virilism is already present in women patients. Estrogens will tend to counteract these effects. The androgenic effect will regress on withdrawal or reduction of the dose of the drug.

Thus, the physiologic effects of these drugs properly lead to caution in selection of patients to whom they are to be given. It seems highly important to evaluate the cardiac status, the blood pressure, the kidney function, the previous psychic behavior and the diabetic status of the patient, and where any of these are abnormal, to use these hormones either very cautiously or not at all.

The last complication that I want to mention relates to choice of drug and dosage plan rather than selection of patients. Atrophy of the adrenal follows continued cortisone therapy and hypertrophy results from ACTH therapy. This is readily understandable. I have seen no report of permanent damage to the adrenals by this therapy but this effect is definitely observable after treatment. Weakness simulating Addison's disease often occurs a few days after stopping cortisone, particularly on its sudden cessation. A relapse in symptoms that may spontaneously remit is similar evidence. This relapse will be less likely if the drugs are withdrawn slowly, "tapered," over a period of the last 3 days to a week of each course of treatment. Use of ACTH in appropriate doses instead of cortisone for the last two or three days has also been suggested.

I have seen no reports of pituitary atrophy following ACTH, perhaps because of no tests for it. It seems reasonable that it should occur. Temporary relapse after therapy with ACTH as well as cortisone makes it seem probable.

An additional important physiologic effect of these drugs is that injection or secretion of cortisone leads to reduction in the circulating eosinophiles. On adequate therapy the eosinophile count may fall to very low figures, even to the vanishing point. ACTH

therapy without a fall in the eosinophile count to below half of the pretreatment level indicates inadequate dosage or inability of the adrenal cortex to respond to stimulation. Under special conditions this is Thorn's test of adrenal function. Therapy by either hormone to the point of a proper eosinophile fall without symptomatic relief suggests ineffectiveness of the hormones in that patient or his disease. Eosinophile counts before and during therapy are therefore important.

The eosinophile count here is not that usually done as a part of the usual routine blood counts. The absolute eosinophile count should be done, with direct counting of the cells by special techniques. This can be done by anyone capable of doing the more usual blood counts. Normal values are 150-200 eosinophiles per cubic millimeter of blood.

There is usually little difference in the effectiveness of cortisone and ACTH. Cortisone is generally the drug of choice because its cost in therapeutically effective amounts is about half that of ACTH, because of the greater frequency with which ACTH must be given, because of the possibility of giving cortisone by mouth, because of the slightly more widespread effect of ACTH due to its stimulation of production of all cortical hormones, and because of the occasional phenomenon of the adrenal being incapable of stimulation by ACTH. On the other hand, the use of ACTH seems more physiologic and the atrophy of the adrenals on cortisone therapy seems fraught with more danger than is their hypertrophy on ACTH therapy.

As to the preparation to use, ACTH can be given only hypodermically, in simple watery or saline solution that must be given every six to eight hours at first and rarely less often than every twelve hours. Long-acting preparations have been described but are not yet available for general use. Cortisone is available in tablets to be taken by mouth. It is only slightly if at all less effective by this route than when given intramuscularly and the cost is about the same for the tablets and the sterile saline suspension.

It is difficult to express specific dosage. The general plan of action usually followed is to give fairly large doses until relief occurs and until there is a fall of the eosino-

philes to below 50 per cent of the pretreatment level. This will usually occur by the third day of treatment. If not, the larger doses are continued or resumed. The dose is then reduced, gradually, until the patient gets each day the smallest dose on which he will maintain relief. This minimal dose is continued for the desired period of time. It is not stopped abruptly but tapered off during the course of a few days.

Hench, Kendall, and associates at the Mayo Clinic report in a recent article (J. A. M. A. 144: 1327, Dec. 16, 1950) that their usual cortisone dosage in rheumatic diseases is 300 mgm. the first day and 100 mgm. daily thereafter but that on special occasions 150 or 200 mgm. are given daily for longer periods up to five weeks. They found maintenance doses of 75 mgm. incompletely effective in severe cases although milder cases remained symptom free on smaller doses, some as little as 35 mgm. daily. Merck and Company includes a leaflet in its cortisone package which gives much of this information. It recommends 100 mgm. three times at eight hour intervals, twice at twelve hour intervals, and every twenty four hours thereafter until therapeutic effect is reached, then a reduction in daily amount by about 10 mgm. every three days until the minimum maintenance dose is determined. Such empiric dosage is probably satisfactory. Most authors report approximately this same dosage plan. Each suggests the necessity of increasing the dose if there is no effect. I have started with 100 mgm. every eight hours for 3 doses and then given it twice daily until fall in the absolute eosinophile count to below one half the pretreatment level occurred, then dropped the dose to 100 mgm. daily for a few days and finally, reduced it further to determine the minimum maintenance dose. This possible prolongation of initial higher doses increases the probability of complication so that the empiric dosage is probably preferable.

ACTH is given in somewhat similar manner, bearing in mind that 40 mgm. of ACTH have about the same effect as 100 mgm. of cortisone and that it must be given at more frequent intervals. The equivalent of the cortisone schedule suggested would be ACTH given every six hours, day and night, 30 mgm. for 4 doses, 20 mgm. for 4 doses, and then 10 mgm. every six hours thereafter.

Further reduction can be done by reducing the size of the dose but increasing the interval first is probably better. It is suggested that the 10 mgm. every six hours be changed to 12 mgm. every eight and then to 15 mgm. every twelve hours. The individual dose can then be reduced in amount. Only a rare patient can maintain remission on a single daily injection of ACTH.

With each hormone it may be necessary, in some cases, to give larger initial doses to get effect, 300 or even 400 mgm. of cortisone or 120 or even 150 mgm. of ACTH daily. If given at all, these doses must be given with greatest caution. They are extremely unwise with any of the contraindicating factors mentioned a while ago. Failure of the eosinophiles to fall by the third day and absence of clinical response suggest the need for higher dosage but the physician must always remember that the higher doses enormously increase the probability of side effects.

There is not room in this paper for discussion of the selection of this form of therapy as opposed to other measures in the wide variety of diseases in which it has been shown to be effective. Attention is called to the fact that these drugs are often not the treatment of choice.

The manner of therapy described above is appropriate in those patients with rheumatoid arthritis to whom the drug is given, the maintenance dose being controlled by the subjective symptoms, fever, and the sedimentation rate. The proper duration of such treatment of this chronic disease has not been clarified. Hench and his associates have apparently given it continuously for as long as 140 days but most cases cited have had it for rather shorter periods, more nearly in the neighborhood of 30 days or less. Merck recommends that a "course" of treatment should not exceed 5 to 6 grams, 50 or 60 100 mgm. doses. The smaller the total dose, the less likely are the complications. A period of time of approximately equal length, preferably six weeks or more, to allow regeneration of the atrophied adrenal cortex has been suggested. Studies are in progress by investigators in various centers as to the ideal dosage schedule, the ideal length of courses of treatment, of intermission, etc., but no conclusive information is available. If relapse is so prompt and severe

as to demand too early resumption of the drug, it would seem appropriate to alternate courses of cortisone with courses of ACTH but one must remember that this alternation only protects the adrenal against atrophy. The other undesirable side effects are continuous under this treatment plan and therefore of greater danger.

In rheumatic fever, although the fever and joint symptoms may subside rapidly and the sedimentation rate somewhat less so, other manifestations may subside more slowly. This may demand longer initial higher doses, and perhaps longer courses of therapy but the failure of many acute cases to relapse lessens the necessity of repeated courses. The greater potentiality of heart failure leads one to hesitate to use the larger doses usually required in chronic active rheumatic fever.

In most of the other diseases in which this treatment is used, dosage and control are similar, the initial dose being that necessary to get eosinophile fall, the continuing dose being that necessary to maintain clinical relief, and the duration and repetition of therapy being regulated by relapse and the usual clinical course of the disease.

The chief disorder in which these compounds are given in a different manner is the nephrotic syndrome. Here they are given in the usual initial and subsequent dosage but therapy is stopped after 5 days or when maximum eosinophile fall occurs. During therapy there may be increase in fluid retention. The drugs are withdrawn and may be followed by a marked diuresis. The possibility of kidney damage, sodium retention, and the danger of increased edema to these patients must be carefully considered.

In summary then, cortisone and ACTH are powerful hormones that, while exhibiting their surprising action on the course of various diseases, also exhibit their normal physiologic actions. From a therapeutic viewpoint, these normal physiologic actions are usually complicating side effects and may be contraindications to the use of the drugs. The drugs should not be used at all in patients with congestive heart failure, materially reduced kidney function, a history of more serious psychic disturbances, or perhaps with severe diabetes. They should be used only with great caution in patients

with any heart disease, edema, hypertension, or a history of less severe psychic aberrations.

While on these drugs a careful watch must be kept for overstimulation, for the here-undesirable side-effects. Patients should be weighed daily, clinical edema sought, and blood pressures taken daily when they are on higher dosages, less frequently on lower maintenance levels. The psychic status should be evaluated. Patients on higher dosages, those taking them for longer periods, and particularly those with cardiovascular problems should take a low sodium diet and should receive potassium salts by mouth. If these measures or mercurial diuretics do not control edema, if the blood pressure goes up, if there are undesirable psychic responses, the therapy should be reduced or stopped. If other side effects are bad, dosage should be reduced to the point of a tolerable compromise between symptoms of the disease and of the treatment.

Finally, though we should use these drugs when necessary, we should do so with all possible care. We should not use them indiscriminately, and we must be constantly watchful for the announcement of the more specific and less dangerous but related methods of treatment that are almost inevitable now that these things have opened the door to a completely new field of medical investigation.

Nasal Injuries—A patient with an injured nose is initially concerned with the cosmetic result. The rhinologist, notwithstanding his desire to restore or even improve the original contour, is primarily concerned with and interested in restoring nasal function. He is aware that the relationship between anatomy and physiology is a most intimate one. In other words, normal architecture is essential for normal function. An uncorrected nasal injury not infrequently leads to nasal occlusion of one or both nasal cavities; also, changes in the pressures and directions of the air currents in the nasal cavities will often result. Abnormal contacts between the septum and turbinate will frequently produce syndromes of headache, and neuralgia, by direct pressure or by interference with the drainage of the nasal secretions. The relation of the nasal (and sinus) cavities to speech should likewise not be overlooked. Sound vibrations originating in the larynx have the benefit of this resonating chamber. Resonant sounds are improved to full quality by free vibration of the air within these cavities.—*Bryant, New Orleans M. & S. J., February 1951.*

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Case report by

Benjamin P. Clark, M. D.

Subluxation or dislocation of the head of the radius (commonly called "nursemaid's elbow") is a relatively frequent occurrence in children below the age of three years. It is occasionally seen up to the age of nine years but no cases have been reported in older age groups. Thus it is more often seen by the pediatrician or general practitioner than by the orthopedist or general surgeon. It is not adequately discussed in pediatric texts, orthopedic works or textbooks on general surgery. Although it involves bone and joint, it is and should be treated by the pediatrician or general practitioner.

The mode of production of the injury is identical in almost every instance; that is, a sudden pull on the extended arm of a small child. Usually an adult has the child by the arm and is pulling on it to assist the child up from a fall, across a street, up a curb, or out from under a table. Occasionally a child in trying to take a toy away from another child may produce the injury.

A typical case history is as follows:

H. W., age 2½ years, was first seen because of pain and inability to use the left arm. His father had been standing with him on a downtown curb holding him by the left hand waiting for a red light to change. Suddenly the child jumped off the curb and started into the street directly in front of an approaching car. His father at once pulled him back onto the curb and the child immediately cried out with pain in the left arm and refused to use the arm thereafter. He cried whenever the arm was moved.

When seen about 2 hours after the incident the child was holding the left wrist in the right hand. The arm was not swollen or deformed. The hand was pronated.

The father stated that the child said that his wrist hurt. There was no limitation of motion in the wrist joint. The elbow could be flexed and extended without much pain. However, any attempt to supinate the hand

resulted in great pain as did pressure applied over the head of the radius. X-rays of the elbow in anterior-posterior and lateral views were negative for fracture.

The arms was flexed about 90 degrees at the elbow, pressure with the thumb was applied over the head of the radius and the hand and forearm forcefully supinated. There was a loud snap or click which could be both heard and felt and the function of the arm was fully restored.

Several points are illustrated by the above report. 1. The history of the manner of occurrence of the injury is characteristic. 2. Pain may be in the elbow but is often referred to the wrist. 3. The hand is kept in pronation. 4. All motions are free except supination. 5. The head of the radius is tender. 6. There is no external deformity and the x-rays are negative. 7. The snap or click assures one that the diagnosis is correct and that the treatment has been successful. It should also be pointed out that self-correction will occur within two days if the arm is simply placed in a sling which should also be done after manipulative reduction.

Recurrences of this injury are not uncommon in children of frail musculature. The exact cause of the lesion is not known but some workers feel that the ligaments about the elbow may not be well enough developed at this age to hold the radius in place against a sudden hard pull.

All of these cases should have an x-ray made to rule out the so-called Monteggia fracture, which is a fracture of the shaft of the ulna associated with an anterior dislocation of the head of the radius. However, this fracture usually occurs as a result of a fall or of direct trauma to the elbow rather than by a sudden pull on the extended arm.

The prevention of tuberculosis by minimizing public contact with infectious persons begins exactly like the recipe for rabbit stew. "First, catch your rabbit." Miniature chest filming is the process which has recently made that first step economically possible on a broad scale.—*Van Zwalenburg, J. Michigan M. Soc., November '49.*

Congenital Esophageal Atresia—The preoperative management and preparation of these children is at least of equal importance to the dexterity of the operating surgeon. The basic principle in the preoperative management of these infants is to utilize all measures possible to prevent pulmonary contamination. Certainly, therefore, in any child in whom there is a true suspicion of the possibility of this diagnosis nothing must be given by mouth. The upper esophageal stump must be kept dry of secretions to prevent overflow aspiration. This may best be accomplished by placing a small nasal catheter into the upper esophagus and keeping a slight negative pressure on this. Such a catheter will frequently become occluded with the inspissated mucus and may need very gentle irrigation with small amounts of saline. The more common method of aspiration of the pharynx, consisting of frequent use of oropharyngeal suction with a bulb syringe is to be condemned as it has been our experience that this may frequently produce considerable edema and trauma of the soft palate. Repeated passage of a nasal catheter may produce bleeding and blood aspiration. Once the upper esophageal stump is aspirated and kept dry, then the preferable position is that of reverse Trendelenburg in order to decrease the chances of contamination of the tracheo-bronchial tree by the gastric secretions, if one is presented with a fistulous communication to the trachea through the lower esophageal segment.

An extremely valuable measure in the preoperative management of these patients has been stressed by Cameron Haight and further emphasized by Bigger. One must expect a certain period of decreased pulmonary function of the side utilized for operation. Either side may be utilized, although the right extra-pleural approach is preferred. Therefore, if one sees the child without evidence of major pulmonary complications, the child is kept in reverse Trendelenburg position, lying on the right side for 12 to 24 hours prior to operation. This maneuver allows any secretions or aspirated material present in the tracheo-bronchial tree to gravitate toward the side which will subsequently be temporarily de-functionalized by operation. Should the child achieve diagnosis at a later stage, and one be presented with the major pulmonary pathology on the left side, then the preoperative position of choice would be on the left, and the left side utilized for the operative procedure. The presence of the aortic arch and descending aorta on the left complicates the left approach, and when we have had to utilize this approach we have usually found it necessary to mobilize the arch by ligation of a variable number of intercostal arteries.

In all children presenting this abnormality, preoperative treatment with antibiotic drugs is an absolute necessity. Even if there are not

striking findings of pulmonary disease, it is rare, if ever, that these children have a completely clean pulmonary tree. Furthermore, it is well to have an adequate amount of antibiotic material circulating in the blood at the time of carrying out the operative procedure. It is our practice to give these patients 30,000 units of penicillin every three hours intramuscularly for 24 hours prior to operation and also to give them 0.125 grams streptomycin intramuscularly at an eight hour interval.

Much attention has been paid in the literature to the factor of dehydration in these infants. We feel strongly that this aspect has been unduly over-emphasized. We are all cognizant of the greater tendency with which pulmonary edema may be produced in the patient in whom functioning lung volume is decreased by either atelectasis or pneumonia. Furthermore, there is increasing evidence being presented that the actual fluid requirement of the newborn infant in the first three to five days of life is much smaller than originally considered. In particular, in the premature infant it may not be necessary to give any parenteral fluid. If the child is not premature and is seen within the first 48 hours of life, then he is given one-half the expected fluid requirement in the 24 hours prior to operative procedure; if he is more than 48 hours of age then the full fluid requirements for one day are given in the 24 hour period prior to operation.

The factor of abdominal distention in these children has drawn considerable comment. Dr. Bigger has recommended that this aspect be controlled by a preliminary gastrostomy. Thus, he carries out a gastrostomy to deflate the gastrointestinal tract from 24 to 48 hours prior to the intrathoracic operative procedure. One cannot deny the apparent efficacy of this procedure on studying the results obtained by this method. However, it is our opinion that this abdominal distention, which is felt both to decrease pulmonary function and to increase difficulties of anesthesia, may be overcome if one passes the catheter utilized in the esophageal anastomosis down into the stomach and leave it in place until the completion of the operation. Then suction is applied to the catheter and the stomach deflated at the completion of the operative procedure. The only criticism to Dr. Bigger's recommendation is that gastrostomy may represent an unnecessary operative procedure. One must emphasize that Bigger only recommends gastrostomy when one is confronted with a tracheo-esophageal fistula communicating with the distal esophageal segment. If one does carry out a preliminary gastrostomy, there is an additional concern in regard to loss of electrolytes. Furthermore, if one can satisfactorily perform a direct end-to-end anastomosis, gastrostomy is not a necessary adjunct in the majority of patients.—*Abbott and Hopkins, J. M. A. Georgia, Feb. '51.*

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NEW VISTAS IN MEDICINE

New vistas are opening in medicine. In the days of Pasteur in bacteriology and of Virchow in pathology great progress was made in the study of disease, notably the infectious diseases, and our understanding of these disorders was advanced enormously. The diseases which took such a deadly toll in that day have now largely been brought under control, in many instances almost eliminated. But the outlook changes. As man's life expectancy has thus been lengthened, other disorders, the so-called degenerative diseases, have come to dominate. Today they constitute our chief problem. Although physicians see today very little typhoid, malaria or intestinal diseases of infancy and much less tuberculosis, they encounter on the other hand more and more cardiovascular diseases, arthritides and other disorders of this character. Anything that will give a better understanding of this latter group of diseases will contribute greatly to the advancement of medicine.

This is what Hench, Kendall, Slocum and Polley have done in their discovery of the beneficial effects of cortisone in rheumatoid arthritis and other apparently unrelated diseases. This discovery has broadened our vision enormously and has introduced a new era of medical investigation. Elsewhere in this issue of the Journal will be found three up-to-the-minute papers on this subject by members of the faculty of the Medical College of Alabama.

What is the underlying relationship, if any, between the several diseases influenced by this adrenocortical steroid, such for example as rheumatoid arthritis, status asthmaticus, gout, pemphigus, leukemia, the hypersensitive states and glomerular nephritis? In an effort to explain the relationship, if any, between these diverse disorders can we predicate a common metabolic factor, hormonal in nature, which is responsible in health for the maintenance of the efficiency and integrity of a number of different tissues? And can we assume, as has been suggested, that lack of this control is responsible for many apparently unrelated disorders, notably those of the degenerative groups? Then can we by the further study of endocrine and other physiologic processes secure a better understanding with perhaps

ultimate control of these diseases? Dimly it looks as if we can.

J. S. McL.

AUREOMYCIN IN THE TREATMENT OF THE COMMON COLD

"Because of the effectiveness of aureomycin in the treatment of primary atypical pneumonia of unknown etiology, often called virus pneumonia, and on many bacterial and nonbacterial microorganisms, an investigation, under controlled conditions, of its effect on the common cold appeared desirable." The above are the opening words of the recently published article by Col. R. J. Hoagland¹ and his co-workers in the Army Medical Corps inquiring into the effectiveness of aureomycin in the treatment of the common cold. The Army investigators go on to tell us: "Any form of treatment for the common head cold is influenced by so many factors that only a rigidly controlled study eliminating as many variables as possible will provide results on which relatively valid conclusions can be based. Some of the variables are suggestibility of patients and also their physicians; fluctuation of a person's degree of immunity; difficulty of objective diagnosis of a head cold; unreliability of subjective impressions of a developing head cold until clear-cut symptoms, such as "sniffles," occur—and even then the patient may have some other disease, such as vasomotor rhinitis; the variable course of a head cold; the difficulty of follow-up examinations in a relatively trivial, spontaneously curable and self-limited disease; and variations in age and general health of patients.

"Some of these factors merit further discussion. Fluctuations of immunity were discussed by Andrewes in his Dunham Lectures at Harvard Medical School. He concluded that almost everyone has his own foolproof technic for preventing or curing colds, yet colds are as numerous and as troublesome as ever: 'even the most eminent men of science almost invariably lose all sense of critical judgment when colds and

especially their own colds are concerned.'"

And we are further told: "The aim of this investigation was to eliminate as many variables as possible. The study was confined to healthy young males in the military service. Medical attention was rendered before duties began, eliminating the temptation to seek needless medical attention to avoid onerous duties. Personal prejudice was lessened because the medical officers prescribing treatment and doing follow-up examinations were unaware of what medicines the patients were receiving.

"Pharmacists dispensed aureomycin and inert yellow capsules in rotation and recorded the necessary protocol in a ledger. Patients were encouraged to report for medical attention as soon as possible, and we noted particularly the effect on local and constitutional symptoms, the development of thick nasal discharge, the duration of this cold compared with the average length of a cold for the patient and the occurrence of undesirable side effects."

The authors state further: "This study of 309 patients with head colds disclosed that cures within twenty-four hours were reported by 10.4 per cent of 154 patients given aureomycin orally, but 9.7 per cent of 155 patients receiving placebos also reported cures."

And the following paragraph is highly significant: "A noteworthy result of this investigation is that practically identical proportions of aureomycin-treated and placebo-treated patients reported cures in twenty-four hours. The results of this study corroborate the belief expressed in a study on the use of antihistamines in the treatment of colds; namely, that spontaneous recovery of patients with colds occurs so frequently that enthusiastic conclusions regarding effects of treatment must be based on unassailable evidence. In this study about half of the patients reported great or moderate help derived from inert material."

The Army investigators conclude: "The necessity of a carefully controlled clinical investigation of treatment of the common cold is again demonstrated since in this investigation about half the patients receiving inert material reported either moderate improvement or a cure within twenty-four hours.

1. Hoagland, R. J.; Dietz, E. N.; Myers, P. W., and Cosand, H. C.: Aureomycin in the Treatment of the Common Cold, *New England J. Med.* 243: 773 (Nov. 16) 1950.

"There was no significant difference in the proportion of cures reported by patients with colds receiving aureomycin and by those receiving a placebo. Furthermore, essentially the same proportion of patients treated with aureomycin and placebo reported slight or no benefit from either type of treatment."

Thus again are we faced with the disappointing but inescapable conclusion that the common cold stubbornly refuses to yield to many of our therapeutic procedures. It is most worth while that search for therapeutic agents to overcome or shorten the common

cold continue to be made but all too often the announcement is prematurely made that a cure for the common cold has been found when such is not the case. Happily the anti-histamine craze of a year or so ago has abated considerably, but there are still many, even within the profession, who use these dangerous and frequently useless drugs excessively. The Army medical group is certainly to be commended upon its level-headed and scientific approach toward evolving an effective treatment for a most ancient, widespread and troublesome disease.

W. W. W.

**PROGRAM OF THE ANNUAL SESSION
OF THE
MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
MOBILE
APRIL 19, 20, 21, 1951
ADMIRAL SEMMES HOTEL**

GENERAL INFORMATION

All sessions of the Association will be at the Admiral Semmes Hotel, convention headquarters.

The maximum time consumed by essayists must not exceed fifteen minutes. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the Journal of the Association.

All papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.

Papers will be called in the order in which they appear on the program. Should the reader be absent when called, his paper will be passed, and called again when the program is concluded.

HOTEL RESERVATIONS

Reservations are to be made directly with the hotel. However, if difficulty is experienced in procuring accommodations, write the Chairman of the Hotel Committee.

SCIENTIFIC EXHIBITS

Application for space for scientific exhibits should be addressed to Dr. E. G. DeBaKey, Van Antwerp Building. Space available is of three panels, four feet square.

GUESTS

Members of the Woman's Auxiliary, the Alabama State Nurses' Association, the Gulf Coast Clinical Society, and visiting physicians are invited to attend the meeting. The Association will likewise welcome, as guests, members of the allied

medical and welfare groups of Alabama. When in attendance, guests are asked to register at convention headquarters in the lobby of the Admiral Semmes Hotel.

THE FIFTY YEAR CLUB

According to custom, physicians who graduated fifty years ago will be honored by the Association at this meeting. Their names appear in the program.

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PROGRAM

First Day, Thursday, April 19th

Admiral Semmes Hotel

Morning Session

9:00 A. M.

Call to order by the President—
Joseph M. Weldon, Mobile.
Invocation—
Address of Welcome—
Hon. E. M. Megginson, Mayor of Mobile.
Address of Welcome—
*Andrew D. Henderson, President,
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PART I

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Jack Jarvis, Chairman.
3. Maternal and Child Health—
T. M. Boulware, Chairman.
4. Physician-Druggist Relationships—
W. M. Salter, Chairman.
5. Anesthesiology—
Bryce Robinson, Chairman.
6. Postgraduate Study—
Ralph McBurney, Chairman.
7. Cancer Control—
John Day Peake, Chairman.
(b) American Society, Alabama Division—
*Mrs. Lillian G. Meade, State Com-
mander.*
8. Tuberculosis—
Paul W. Auston, Chairman.
9. Medical Service and Public Relations—
J. Paul Jones, Chairman.

REPORTS OF SPECIAL COMMITTEES

1. Nurse Recruitment—
A. D. Henderson, Chairman.
 2. On the Coroner System—
J. R. Garber, Chairman.
 3. On Voluntary Insurance Plans—
John A. Martin, Chairman.
- Report of the Secretary-Treasurer—
Douglas L. Cannon, Montgomery.
Report of the Committee of Publication—
Douglas L. Cannon, Montgomery.
Reports of Vice-Presidents—
(1) Southeastern Division
E. L. Gibson, Enterprise.
(2) Northwestern Division
J. G. Daves, Cullman.
(3) Southwestern Division
A. J. Treherne, Atmore.
(4) Northeastern Division
J. O. Finney, Gadsden.
Message of the President—
Joseph M. Weldon, Mobile.

PART II

SCIENTIFIC PROGRAM

1. *Amebiasis in Northwest Alabama*—
HARRY V. HERNDON,
Florence, Alabama.
2. *Subject to be announced*—
WILLIAM B. CLARK,
New Orleans, La.
3. *Professional Responsibilities in Catastrophe Management*—
CHAMP LYONS,
Birmingham, Ala.
4. *Diagnosis and Treatment of Subarachnoid Hemorrhage*—
JOE H. LITTLE,
Mobile, Alabama.

Afternoon Session

Thursday, April 19th

2:00 P. M.

1. *The Acute Abdomen as Seen in General Practice*—
E. L. STRANDELL,
Brewton, Alabama.
2. *Placental Stage and Postpartum Hemorrhage*—
WILLIAM J. DIECKMANN,
Chicago, Ill.
3. *Consideration of Hematuria*—
JOHN W. DAVIS, JR.,
Montgomery, Alabama.
4. *Use of Blood Fractions in General Practice*—
LOUIS K. DIAMOND,
Boston, Mass.
5. *Presentation of the Curriculum for Training in Clinical Medicine of Medical Students and Residents*—
TINSLEY R. HARRISON,
Acting Dean,
Medical College of Alabama,
Birmingham, Alabama.
6. *Trends and Treatment in Ear, Nose and Throat Allergy*—
RALPH M. CLEMENTS,
Tuscaloosa, Alabama.

Second Day, Friday, April 20th

Morning Session

9:00 A. M.

1. *The Juvenile Amputee*—
JOHN F. COMER,
Birmingham, Alabama.
2. *Diagnosis and Management of Pancreatic Lesions*—
THOMAS A. JOHNSON,
Philadelphia, Pa.
3. *Diagnosis and Early Treatment of Poliomyelitis*—
W. A. DANIEL, JR.,
Montgomery, Alabama.

4. *The Handling of Operating Room Emergencies Under Anesthesia*—
ALFRED HABEEB,
Fairfield, Alabama.
5. *The Jerome Cochran Lecture The Relation of Hormones to Female Genital Tumors*—
EMIL NOVAK,
Baltimore, Md.
6. Recognition of the Fifty-Year Club.
7. Announcement of Vacancies in the College of Counsellors.

Afternoon Session

Friday, April 20th

2:00 P. M.

1. *Surgery in the Treatment of Hypertension*—
JAMES G. DONALD,
Mobile, Alabama.
2. *The Present Status of the Treatment of Diseases of the Thyroid Gland*—
GEORGE CRILE, JR.,
Cleveland, Ohio.
3. *Diagnosis of Diseases of the Colon*—
ROBERT C. PENDERGRASS,
Americus, Georgia.
4. *Surgery in the Treatment of Pulmonary Tuberculosis*—
JESSE P. CHAPMAN, JR.,
Selma, Alabama.
5. *Acute Myocardial Infarction—Diagnosis and Treatment*—
E. DICE LINEBERRY,
Birmingham, Alabama.
6. *Roentgen Aspects of Gallbladder Pathology—With Slides*—
J. A. MEADOWS, JR.,
Birmingham, Alabama.

Last Day, Saturday, April 21st

9:00 A. M.

Business meeting of the Association sitting as the Board of Health of the State of Alabama.

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls;
- (3) Election and Installation of Officers.

Adjournment

THE FIFTY YEAR CLUB
CLASS OF 1951

Blue, John H.	Martin, Robert A.
Boyd, Lynn M.	Maxwell, Walter J.
Bryan, James L.	McLain, Andrew D.
Coleman, Henry N.	Miller, Samuel T.
Comer, Robert T.	Moore, Lawrence H.
Darby, Henry A.	Parker, Lorenzo D.
Dixon, Duncan P.	Partlow, William D.
Gramling, James W.	Robinson, Henry W.
Grayson, Ambrose T.	Roe, Lee Wright
Huey, Thomas F., Sr.	Sankey, Howard J.
Jackson, Leonidas F.	Savage, Henry J.
Jones, Giles W.	Scott, Edgar M., Sr.
Killgore, James J.	Spruill, George E.
	Wood, Frank R.

VACANCIES IN THE COLLEGE OF COUNSELLORS

Vacancies that will present in the College of Counsellors at this meeting of the Association are as follows and for the reasons set forth:

1st Congressional District—1. The second term of seven years of W. A. Stallworth has expired.

2nd Congressional District—3. The first terms of seven years of John L. Branch and E. F. Leatherwood have expired. L. V. Stabler's second term of seven years has expired.

3rd Congressional District—1. J. S. Tillman is deceased.

4th Congressional District—1. C. W. C. Moore's second term of seven years has expired.

5th Congressional District—2. The first terms of seven years of R. A. Foshee and A. C. Gipson have expired.

6th Congressional District—2. C. T. Acker's second term of seven years has expired. W. C. Golden's first term of seven years has expired.

7th Congressional District—3. E. T. Brown's second term of seven years has expired. R. B. Dodson's first term of seven years has expired. M. S. White is considered as having resigned.

8th Congressional District—2. The second terms of seven years of J. O. Belue and Carl A. Grote have expired.

9th Congressional District—2. The first terms of seven years of H. W. Allgood and Dan C. Donald have expired.

Counsellors and delegates from these districts will meet in the ballroom of the Admiral Semmes Hotel at 7:30 P. M. April 20th for the purpose of making nominations to fill these vacancies.

MEDICAL NEWS

A. A. G. P. ELECTS OFFICERS

The Alabama Academy of General Practice held its annual election of officers during its recent postgraduate seminar presented annually by the Medical College of Alabama and its staff. Dr. R. B. Robins (Camden, Arkansas), Speaker of the Congress of Delegates of the American Academy of General Practice and Vice-President of the American Medical Association, was the featured speaker at the annual banquet.

The following physicians were elected to hold office during the coming year: President, Dr. A. S. Dix, Mobile; President-Elect, Dr. A. F. Wilkerson, Marion; Vice-Presidents, Dr. J. E. Foster, Lineville, Dr. George W. Newburn, Jr., Prichard, Dr. Greene Smith, Ensley, and Dr. W. B. Virgin, Montgomery. Dr. J. N. Carmichael, Fairfield,

was elected a member of the Board of Directors.

The Alabama Academy has during the last year increased 100 per cent in membership. The work that the group is doing with and for the general practitioner is highly commendable.

SOUTHEASTERN SURGICAL CONGRESS

The nineteenth Graduate Assembly of the Southeastern Surgical Congress will convene at Hollywood Beach Hotel, Hollywood, Fla., April 11-14, 1951. Reservations should be made directly with the hotel. Information regarding the Assembly may be had from Dr. B. T. Beasley, 701 Hurt Building, Atlanta 3.

Indirect Air Cystoscopy—Indirect air cystoscopy has been suggested as an adjunct to the armamentarium of female urology. It has been found that certain desirable features of both the water (or indirect) method and the air (or direct) method may be taken advantage of, and at the same time many of the shortcomings of each may be eliminated.

By using the indirect cystoscope with its assortment of telescopes and accessories, and air as medium, a closer and more minute inspection of the entire bladder may be obtained.

By using the knee-chest position, and air as the visual medium, a great amount of cumbersome equipment, such as the irrigating flask and tubes, and special tables, is eliminated. When the bladder is distended passively with air, a more accurate picture of the mucosal vascularity is obtained than when the bladder is actively distended with water and a varying amount of blanching results from the hydrostatic pressure.

Complete asepsis is more easily maintained with indirect air cystoscopy than with the indirect technic of water cystoscopy. Such precautions as scrubbing the hands or wearing sterile gloves are not necessary in indirect air cystoscopy. It is consequently less time consuming.

For bladder inspection in cases of suspected interstitial cystitis (Hunner's ulcer), indirect air cystoscopy is most satisfactory.

Indirect air cystoscopy is the technic of choice for inspecting and evaluating cases of vesicovaginal fistula.

Indirect air cystoscopy may be used in preoperative catheterization of the ureters when extensive pelvic surgery is contemplated.

It is believed that the technic of indirect air cystoscopy may add some facility and exactness to female urology, which has been developed, with urology in general, to one of the most exact medical sciences of today.—*Ridley, South. M. J., February 1951.*

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE FOREST

W. A. Dozier, Jr.

Director of Public Relations

At the present time and in our present international situation we in the United States must be very careful not to fall into the position of not being able to see the forest for the trees. In other words we must not become so immersed in details that we forget the overall picture. And conversely, we must also refrain from seeing only the end result of one specific thing and assuming that nothing else will be affected or that the end justifies the means. Although some of the thoughts expressed or intimated in this article have been stated before, it still behooves us, because of the critical times, to do as a professor in business controls used to stress—go back and touch first base.

It is very easy for the human mind to pinpoint a job and forget to take a view of the total situation. This is the simplest way. Still it certainly is not the wisest way. One example here will suffice. There is a proposed bill before the present Congress which would assist in the provision of housing and community facilities and services required in connection with the national defense. Community facilities are defined to include hospitals and other places for the care of the sick. Practically as soon as this bill was proposed, requests were made that the execution of this part of the bill be placed under the authority of a specific governmental group. It was argued that this group had the trained personnel and that proper relationships had already been developed between this group and the various states.

Now that argument is a good one if the basic idea is correct. In other words, is the bill itself necessary? It is not the purpose here to argue the merits of the bill; instead it has been used merely as an example to point out how easy it is to become embroiled in who shall administer and forget, at least temporarily, first to determine if anyone should administer. The use of this example in no manner implies that the following is

happening, but one can see from the above how quickly the mind turns from the important matter to the detail. Such a tactic is one used very often in diverting opposition. If the opponents can be kept busy on details, there is smooth sailing for the basic idea or philosophy; for so very often the detail, which is so hotly argued, will not alter the end result no matter how the detail is settled.

At the same time that one is being so careful not to forget the total picture, he must again be sure not to pinpoint that and overlook the details. Let us take another example here. No one denies that we face grave times. No one denies that there must be for the duration some shifting of powers from the people to governmental administrators. But at the same time one must be very careful that he does not assume too easily that the situation demands thus and so. Before that statement is made or before one even admits such, a careful analysis of the situation, the proposed remedy, and the end results must be made.

Another proposed bill before Congress calls for an extension of selective service. Most people feel that such is necessary. At the same time everyone will admit that defensewise the health of a nation is very important. However, there are many who object to one section of this proposed bill which would authorize the President to provide for physical and mental rehabilitation of individuals who failed to measure up to standards prescribed by the Secretary of Defense. This, to many, is a clear cut case of looking at the end result and trying to overlook the means of getting there.

From the two examples used above it becomes more and more evident that the problem facing the public today is indeed a great one. Each of us must look at the total picture and still be vigilant enough to see the many details making up this aggregate. We must hit that fine balance which will lead us surely and safely to our goal, while at the same time protecting those principles we

hope ultimately to retake as our mode of living. The name calling may not have begun as yet, but in due time it will. Anyone who wants to be careful and look at all facets is likely to call down on his head the ire of those pushing for a specific point. It is not

helping the enemy for us to be thoughtful and to proceed on firm foundations, nor is such a procedure unpatriotic. Let us keep our eyes on the ultimate result, but at the same time let us be sure we are selecting a wise path to follow in reaching that goal.

WOMAN'S AUXILIARY

Mrs. J. G. Daves, Cullman, President

NEW UNITS

Congratulations to the doctors' wives of Covington County who, on January 26, passed the following resolution to become a part of the Woman's Auxiliary to the state and national organizations:

WHEREAS, The wives of the doctors of Covington County wish to be identified with the objects of the Woman's Auxiliary which are: to extend the aims of the medical profession to all organizations which look to the advancement of health and health education; to cultivate friendly relations and promote mutual understanding among physicians and their families; to participate in any endeavor on request of the American Medical Association; to coordinate and advise concerning the activities of constituent Auxiliaries; and to assist in the entertainment at all conventions of the State Medical Association; and

WHEREAS, The pledge of loyalty to the American Medical Association should be of first importance in the mind of every doctor's wife; and

WHEREAS, The strengthening of an organization existing for the purpose of guiding doctors' wives in working with their husbands for the betterment of their great profession should be uppermost in each of our minds; therefore be it

Resolved, That the doctors' wives of Covington County on this the twenty-sixth day of January 1951 do organize the Woman's Auxiliary to the Covington County Medical Society, and pledge our loyalty to the Woman's Auxiliary to the American Medical Association, and will support its activities, protect its reputation, and ever meet its high ideals.

We do herewith affix our signatures attesting our sincerity.

Signed by the following charter members: Mrs. William G. Cumbie, Mrs. James G. Dunn, Jr., Mrs. O. Emfinger, Mrs. John H. Estep, Mrs. Ray Evers, Mrs. Samuel C. Hamner, Mrs. J. F. Holley, Mrs. John C. Hurst, Mrs. J. H. Kyzar, Mrs. Aubrey Bernard Lee, Mrs. Edward R. MacLennan, Mrs. Clifford N. Matthews, Mrs. Coleman D. McLeod, Mrs. Elgin A. Ray, Mrs. Gordon L. Wood, Mrs. Ferrin Young and Mrs. Leslie L. Parker.

To Mrs. Edward R. MacLennan, Opp, Pres-

ident, Mrs. Leslie L. Parker, Andalusia, Vice-President, Mrs. James G. Dunn, Jr., Opp, Secretary, and Mrs. Clifford N. Matthews, Florala, Treasurer, and all members of the Auxiliary the Woman's Auxiliary to the Medical Association of the State of Alabama wishes every success. We offer our assistance at all times. May the years ahead be filled with great joy because of your decision to become part of our organization.

* * *

We also congratulate Coffee County for having organized. On February 7 in Enterprise a majority of the doctors' wives of Coffee county met and resolved to become affiliated with the state and national organizations. Those signing the resolution as charter members were: Mrs. James S. DuBois, Mrs. Edward Lee Gibson, Mrs. James T. Grimes, and Mrs. James Franklin Stanley of Enterprise; Mrs. William Randolph Crook, Mrs. Charles Phillip Hayes, Mrs. John Mason Kimmey, Mrs. Eugene G. Bragg, and Mrs. William Cicero Braswell of Elba.

The following officers were elected: Mrs. John Mason Kimmey, President, Mrs. James T. Grimes, Vice-President, and Mrs. Edward Lee Gibson, Secretary and Treasurer. Dr. Grimes, Dr. Kimmey and Dr. Hayes were elected to serve on the advisory council.

Present at the meeting were Dr. Grimes, President of the Coffee County Medical Society, and Dr. Kimmey, Secretary-Treasurer, both of whom spoke briefly expressing the approval of the Medical Society for the newly organized Auxiliary.

Coffee County has best wishes for success from the entire state organization, and the offer of assistance whenever needed.

BULLETIN

If you do not subscribe to the Bulletin of the Woman's Auxiliary to the American Medical Association, you are missing a great deal as an Auxiliary member. Lack of enthusiasm in any organized group may well be traced to the fact that its members are not keeping up with what is going on in their organization throughout their own community, their state or their nation. It is believed that every member owes this much to her organization, and not just the officers elected for the year. The cooperation you will want to give your leaders will be stimulated by your being a well-informed member, and when you are called upon, you will not have that helpless feeling of not knowing what it is all about.

The December issue of the Bulletin covers in a complete and most interesting manner the national Conference held in Chicago in November 1950. Besides the national officers and committee chairmen, 44 states were represented at the conference, 34 with both president and president-elect, 7 with president and 3 with president-elect. The splendid attendance at this conference was quite significant. It revealed the keen interest of doctors' wives throughout our nation in equipping themselves to become leaders in health and health education.

If your Auxiliary is stumbling around in the dark, not knowing just where, why or how to carry on its program, may we ask that you begin by requesting each of your members to subscribe to the Bulletin and to study the reports of the excellent work being done in other states by other county auxiliaries. When the other Auxiliary programs have been studied, you may wish to call a meeting of your members for the purpose of discussing your program and what you can do.

Please subscribe to the Bulletin, and read it from start to finish; and in sending in your subscription instruct that the December issue be your first.

 ACHIEVEMENTS OF SIGNIFICANCE

(Excerpts from a speech, "A New Milestone in Prepaid Medical Care," by Dr. Elmer L. Henderson, President of the American Medical Association, delivered before the United Medical Service of New York on January 25, 1951 at a dinner

meeting held in observance of the enrollment of its 2,000,000th member.)

"I am honored to have the opportunity of being with you on this significant occasion. And I am extremely happy to add my tribute, and that of the American Medical Association, to the United Medical Service for having enrolled its two-millionth member in the Metropolitan New York area.

"This achievement is of both local and national significance. It not only demonstrates the great progress being made by all types of voluntary health insurance in the New York area but it also is representative of the rapid growth and development, and the promising potentialities, of all the voluntary health insurance plans throughout the entire Nation.

"At the moment, according to my latest information, the United Medical Service is the second largest of the non-profit plans providing insurance protection against surgical and medical bills. I understand that the Blue Shield plan in Michigan, the Michigan Medical Service, edged slightly ahead of you just two or three months ago.

"My confidence extends to all groups in the voluntary health insurance field—the Blue Cross hospital plans, the Blue Shield medical care plans, all the other non-profit plans sponsored by hospitals and physicians, the insurance companies, and the many plans sponsored by labor unions, fraternal organizations, business and industrial concerns and other sound agencies. Among all of them, whether they are operating in cooperation or in competition, there is a determination to prove that voluntary methods are the best answer to our medical care problems. And from all of them there are continuous reports of rapid growth, improved coverage and new developments.

"The Blue Shield plans are enrolling new members at the rate of 28,000 every working day, and they now protect more than seventeen million persons, or approximately twelve per cent of the population. Other non-profit medical care plans, which are not yet in the Blue Shield group, cover an additional two and one-quarter million people, making a total of nearly twenty million in just the physician-sponsored plans alone.

"There now are seventy-two Blue Shield plans in forty-one states, and participating

in their operations are 113,000 of the 150,000 physicians who are in active, private practice. Last year the Blue Shield plans paid out \$150 million for surgical and medical services rendered to member patients.

"The Blue Cross hospital plans added more than three million new members in 1950, and they now are beyond the forty million mark in total enrolment.

"Out of every dollar paid in premiums, the Blue Shield plans now are paying out eighty-two cents in benefits, and the Blue Cross plans are paying out close to eighty-eight cents in benefits.

"At the end of 1949, we know from the last annual report of the Health Insurance Council, more than sixty-six million Americans had some kind of voluntary insurance protecting them against hospital, surgical or medical expenses. It is a conservative estimate, based on all known developments in 1950, that between seventy and seventy-two million Americans now have some form of voluntary health insurance.

"The voluntary health insurance plans are not only growing rapidly but they are also developing new and improved types of coverage, based on sound actuarial standards. As a result of the so-called catastrophic coverage pioneered early last year by the California Physicians Service, fifteen of the Blue Shield plans are now preparing to offer protection against prolonged, costly illnesses such as heart disease, cancer and others. A number of insurance companies also are experimenting with this type of coverage, or are planning to introduce it in the near future. All of the non-profit plans, the insurance companies, and other agencies in the field are studying this important development.

"Marked progress also is being made in making individual coverage more widely available for persons who cannot get group health insurance. Practically all of the Blue Shield plans, and many of the insurance companies, now offer individual enrollments. Maximum progress in this direction is one of the vital objectives of the medical profession and all other interested in the continued growth of voluntary health insurance.

"Another problem which is receiving serious, intensive study, and which ultimately

must and will be solved, is how to extend voluntary health insurance protection to older persons who are beyond the retirement age.

"The remarkable growth and development of voluntary health insurance—which has taken place mainly in just the past ten years, and which still is gaining momentum—is proving that voluntary methods can take the economic shock out of illness, and that dangerous Government intrusion in the field of medical care is completely unnecessary.

"Voluntary methods also are demonstrating their worth and vitality in the solution of other problems involving the supply and distribution of medical service. Throughout the Nation, many state and county medical societies are conducting highly successful programs for placing doctors in communities which need them, for providing medical facilities where needed, for supplying 24-hour emergency medical service, for settling the complaints of patients, for informing the public on matters pertaining to health and medical care, and for insuring adequate medical service for all who need it.

"Such programs are proving that effective action can result from close cooperation among doctors, medical schools, public officials and the people of the community. The American Medical Association is urging and promoting the fullest possible development of such programs in every state, county and locality in the country. This is just one more part of the American answer to those who would socialize medicine first, and the rest of the Nation soon after.

"There is still another area in which we must prove conclusively that American, voluntary methods can do the job. This is the problem of financial aid to medical education—a matter which has been aggravated and given added prominence by the present national emergency, and also by a great deal of distorted, inaccurate propaganda.

"The Board of Trustees of the American Medical Association, at the clinical session in Cleveland in December, took the lead by appropriating a half million dollars as the nucleus of a fund to be raised for the aid of medical schools throughout the Nation. Pointing to the dangers of Federal interference in medical education, the A. M. A. Board of Trustees said:

There is a growing public awareness that Federal subsidy has come to be a burden, not a bounty, for it is bringing intolerable increases in taxation, and is dangerously increasing Federal controls over our institutions and the lives of our people.

"The Board expressed the hope that its action will stimulate other professions, industries, businesses, labor groups and private donors to help swell the fund for medical education—and it urged all American doctors to contribute individually, and to take the lead in obtaining contributions from other sources.

"Since that time there has been a heartening response, in the form of contributions, pledges and expressions of approval and encouragement, from many individuals and organizations both in and out of the medical profession.

"As the second concrete step in this project, the American Medical Education Foundation, a non-profit corporation for the receipt of funds for medical education, has been organized under the laws of Illinois. Contributions to the Foundation can be addressed to 535 North Dearborn Street, Chicago 10, Illinois.

"Assuring an adequate future supply of doctors—through American methods which will preserve the standards and freedom of medical education—is of vital importance to the continued success of the medical care plans, to all those engaged in the provision of health services, and to every American citizen. The medical profession is willing to take the lead, but it also needs and asks the help of Americans who prefer initiative and enterprise to Government domination and control."

FROM DR. LULL

(Excerpts from letter written by Dr. George F. Lull to the doctors that the wives should also read.)

"Even though the President's budget message called for expenditures of \$71.6 millions in the fiscal year 1952—78 per cent above expenditures for the year which ended last June 30—he is not abandoning his "Fair Deal" program, which includes compulsory health insurance.

"His pleas for health insurance, however, have taken a slightly new twist. He is now tying up his program with national defense, saying in his budget message to Congress:

"We need to fill important gaps in our

social insurance system by providing protection on a prepaid basis against the costs of medical care and the loss of family income in cases of disability. These measures will help to provide that material security which is essential to a *vigorous democracy and a highly productive labor force.*"

"To be more specific, the President said: 'We still need to provide insurance against loss of earnings through sickness and against the high costs of modern medical care.'

"He is still demanding federal aid for medical schools even though the American Medical Association has taken the initiative in building a fund for hard-pressed medical schools, which will be distributed with no strings attached.

"We need, more than ever,' the President said, 'prompt enactment of legislation that will help to increase enrollment in medical and related schools, by assisting them to meet their costs of instruction and to construct additional facilities where needed.

"I urge the Congress to enact legislation which will make possible more adequate federal grants to the states for the strengthening of their local health services. The budget includes \$5 million as the estimated first-year cost of the proposed legislation."

"ALL THIS, AND A WAR, TOO!"

"As two Republicans—Martin and Taber—said in a joint statement after hearing the President's message: 'The money for launching these *socialistic* schemes is brazenly sought amid trumpet calls for stronger national defense. Republican Congressmen and the American people will give rearmament needs first consideration but will not stand for a huge tax increase to finance political schemes of socialist planners.

"Senator Dirksen, Republican, Illinois, said in a speech in Chicago a week later that 'the danger is that the government will so tax the people that when they need medical care they'll say, Let the government pay for it.' That is socialized medicine."

The medical profession must continue to be ever alert to the legislative dangers that lie ahead in the Nation's capital. And don't forget to keep your Congressman and your Senators informed on how you feel about socialized medicine bills. Write them periodically. It is one of the best ways of getting crack-pot schemes tossed into the congressional ash can.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

THE SLEEPING GIANT, SMALLPOX

The arrival of a transatlantic passenger ship at an American port is usually pretty much of a routine thing. Doctors from the immigration service make cursory examinations of incoming passengers and ask a few routine questions. Baggage declarations, usually made out at sea, are checked. Baggage itself is opened on the pier, and inquisitive hands feel among its contents for undeclared articles. The pieces that are found to be as described are quickly cleared and passengers make a rush for waiting taxicabs, alone or in the company with welcoming friends and relatives.

But the arrivals of two ships at New York some months ago were not as cut-and-dried as that. There had been a smallpox outbreak in Glasgow, Scotland. The news had been flashed to immigration officials in this country and to those two ships, already at sea. Ships' doctors, always prepared for such emergencies, got busy vaccinating passengers and members of the crews. All those from Great Britain who had not received this protection in the recent past had been required to get it at once. As a result, soon after the Cunarders *Caronia* and *Queen Elizabeth* entered this country's territorial waters more than 1,900 arms of varying degrees of soreness were extended for inspection by representatives of the U. S. Public Health Service. One of them belonged to the *Queen Elizabeth's* master, Commodore Charles M. Ford. Other people caught in that hastily cast net included the beautiful and talented actress, Virginia Mayo, her husband and fellow thespian, Michael O'Shea, and another well known actress, Peggy Cummins. Walter Pidgeon and his wife had escaped this mass shipboard immunization by virtue of having received this protection in London some six weeks earlier.

Thanks to that prompt action, no sparks from that Glasgow outbreak fell on American soil. Or, if they did, the immunization

programs in effect in this country for many years caused them to fall on barren ground. For there was no American outbreak to follow that Scottish outbreak.

There was a time, not so very long ago, when that would not have been true. An outbreak in one place was almost certain to result in an outbreak somewhere else as long as there was any communication between the two places. Most of us do not realize how different the present is from the past in this respect. We cannot comprehend a condition when smallpox scars were the rule and their absence the exception. But there was a time like that.

No smallpox cases were reported from anywhere in this state in 1948, 1949 or 1950. Only one was reported in 1947. With so few reported cases, it is not surprising that smallpox deaths have all but disappeared from the public health picture. The latest reported Alabama death of this kind occurred in 1944. A single death was reported during that year. No deaths were attributed to that cause during the 11-year period from 1933 to 1943, inclusive. So the official vital statistics reports are full authority for our belief that smallpox is approaching erasure from the health picture.

But don't forget something: Smallpox is a sleeping giant. He—if we may attribute human qualities to an impersonal thing like a disease—is by no means dead. He is relatively harmless only because the people and the public health agencies are alert to his dangerous powers. If we should become careless, as the people of Glasgow must have done, the present favorable conditions would soon become unfavorable. Where there is now safety, there would be danger. Where there is now peace of mind, there would be anxiety. Where there is now health, there would be disease. Where there is now happiness, there would be grief. We dare not lower our guards.

The weapon that has proved so effective against this ancient plague is vaccination. It is simplicity itself, and virtually 100 per cent dependable. The experience of mil-

lions of American soldiers and sailors in two World Wars has proved that exposure is harmless to anyone who has received this protection. (And of course it was made available and compulsory to all those in uniform in both wars.)

Equal protection is also available to any resident in Alabama, although the compulsory feature is usually lacking. The State Health Department's Bureau of Laboratories purchases the vaccine in large quantities and supplies it at cost to county health departments. They supply it free to private physicians for use on their patients. The doctors, naturally, are expected to make a reasonable charge for their services in administering it. However, there is no charge for the vaccine itself. Those who are not able to meet this small cost may obtain this protection free from their county health departments. For there is no charge for either the vaccine or its administration when it is administered by county health officers or members of their staffs. Therefore, there is no reason why anyone, rich or poor, should run the risk of getting this disease. Only carelessness or lack of interest should be blamed for every case that develops in Alabama or anywhere else.

Now let us take a look at this still-dangerous form of illness. Let us find out as much as we can about this sleeping giant who may become a raging, devastating monster at any time, unless we are careful.

Smallpox is a virus disease. In that respect, it is like influenza, the common cold, infantile paralysis, and a number of other forms of illness. The organism responsible for it is so small it cannot be detected under even the most powerful microscope.

As you would naturally expect from a virus disease, smallpox is contagious. Indeed it is highly so. That infinitesimally small causative organism known as the variola virus is passed from the sick to the well in various ways, just as viruses of other diseases are. However, smallpox viruses are generated in more parts of the body than are those of almost any other form of illness. You may get them from standing close to a smallpox patient when he coughs or sneezes. You can get them from the discharges from the pox, or blisters. They are present in the feces, or body discharges, of

someone who has smallpox. Those dried scales that fall off after a case has been in progress for some time are especially dangerous as virus centers. In fact, it would not be too great an exaggeration to say that the whole body is actively at work providing the seeds of new cases.

If you ever get smallpox, you will probably not realize you have it for some time. For it is strongly suggestive of influenza at first. Those influenza-like symptoms—high fever, aches here and there about the body, muscle pain, etc.—usually appear about a week or eight days after exposure. However, you may wait as long as sixteen days before they appear. At the end of three or four days you will begin to wonder if what you have is influenza after all. For the characteristic red rash will show up then. Your temperature will drop sharply from the feverish level which seemed so indicative of influenza before. Those red spots will cease to be flat on your skin and develop a third dimension, depth. Rising markedly above the surrounding surfaces, they will stand above them like sand dunes in flat country. Later those red bumps will undergo another change: They will become blisters. No longer dry, they will contain a watery substance. This will change in time to pus.

The red rash usually starts on the forearms and the face. But it does not stay there by any means. It may spread to any or every part of the body. You may have seen pictures of smallpox victims, lying almost nude on their beds or couches and with hardly a square inch of normal skin surface. Some cases, however, are not so extensive as that. The scarred areas may be limited in size and small in number.

But to return to those pus-filled blisters. In time they dry up. They become covered with scabs, crusts or scales. After the victim has had the disease for about three weeks, those scabs or scales begin shedding. But, remember, they are still agencies of infection. Keep away from them.

There is no cure for smallpox, in the sense that there is for a number of other diseases. But there are a few things the physician can do for his patient. He can make him more comfortable. He can protect him against other forms of illness. He can help him

conserve his strength. No one should think of trying to get along without his assistance. Emphasis should be placed upon rest, meaning bed rest. The patient should also receive proper nursing care.

Because of this disease's highly infectious nature, protection of others is important. That means, in this case, isolation. The victim should be kept away for at least three weeks from those who have not been properly vaccinated. The isolation period should be further extended if all the blisters have not completely healed and all the post-blister scabs have not fallen off. Those who are not immune to the disease should be kept away from others for at least 16 days after their exposure to the patient.

The sick room should be well lighted. However, the patient's eyes should not be exposed to strong direct light, natural or artificial. That is not difficult to avoid. Shades can easily be provided for windows, electric lights, etc.

Protection of others should extend to people who do not come near the sick room. For, remember, those dangerous viruses can be passed from the sick to the well indirectly, as well as directly. They may travel on anything he has handled. Those virus-loaded scales that show he is in the final stage before recovery can, and do, drop onto bed-clothing, pajamas, silverware, books, magazines, newspapers and any number of other articles. And those articles can give them a free ride to the next victim. So great care should be taken to keep them within the small circle of the patient's daily routine. Anything containing those scales, the patient's sputum, body discharges or anything else of which they may be a part should never leave the sickroom, except on their way to be burned or otherwise disposed of. Small articles like paper tissue used as handkerchiefs, rags, etc. should be dropped by the patient into a paper bag pinned to the sheet. The whole—bag and its contents—should be burned. Care should be used to prevent spilling. Left-over food should also be burned.

A final word about vaccination. The site is of no consequence except for the comfort and convenience of the person taking it. The conventional site, however, is the upper left arm. The scar is definite but not conspic-

uous. It should cause no embarrassment at any time. Those who object to its being seen may be vaccinated on the left thigh. They should be warned, however, that vaccinations there are likely to have more marked reactions than those on the arm. Too, extra precautions should be taken against infection, something to be avoided in either case.

Normal reaction to even initial smallpox vaccination is relatively slight. A few days afterward—usually about four or five—a small pimple appears at the site. This later changes into a blister. It is the center of a red area. There is usually fever. The glands in the armpits or groin become slightly enlarged. They also become tender. The blister dries into a scab, which is firm and dark. After about two weeks it falls off.

If you have already been vaccinated and are still immune, the reaction is less marked and does not take as long. It usually is nothing more than the appearance of a small pimple. That disappears after two or three days. A person who is partially, but not entirely, immune has a reaction somewhere between these two.

A newly vaccinated person should not take a shower bath until the scab falls off, unless he is able to keep his vaccinated arm dry. He should also be careful about that in taking a tub bath, of course. The vaccination site should also be kept cool. And the newly vaccinated person should resist the strong temptation to scratch it. To do so is an invitation to infection.

A bandage is not necessary for the vaccination site. However, if the vaccinated person wishes to give his arm added protection, he or his doctor may place a light, sterile gauze over the area. It may be kept in place with adhesive tape.

In many of our communities the large number of recalcitrant patients constitute a major problem in tuberculosis control. Surveys indicate that in some localities 35 per cent of those discharged from sanatoriums have signed out against advice. As possible sources of contagion these uncooperative patients pose grave problems for all agencies engaged in public health work. Not only are they a menace to their own families and the community but also to themselves since interruption of treatment usually results in exacerbation of their condition.—*Thomas N. Sheen, M. D., Nat. Tuberc. Bull., October 1950.*

BUREAU OF LABORATORIES

Thomas S. Hosty, Director
SPECIMENS EXAMINED

December 1950

Examinations for diphtheria bacilli and Vincent's	268
Agglutination tests (typhoid, Brill's and undulant fever)	628
Typhoid cultures (blood, feces and urine)	247
Examinations for malaria	119
Examinations for intestinal parasites	3,009
Serologic tests for syphilis (blood and spinal fluid)	20,601
Darkfield examinations	2
Examinations for gonococci	1,389
Examinations for tubercle bacilli	2,843
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	80
Water examinations	1,212
Milk and dairy products examinations	3,569
Miscellaneous	1,073
Total	35,040

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1950

	Nov.	Dec.	E. E.* Dec.
Typhoid and paratyphoid	2	3	4
Undulant fever	4	0	1
Meningitis	3	6	6
Scarlet fever	81	86	103
Whooping cough	111	91	81
Diphtheria	53	23	50
Tetanus	2	3	2
Tuberculosis	396	483	198
Tularemia	1	0	1
Amebic dysentery	0	2	0
Malaria	10	1	95
Influenza	39	154	322
Smallpox	0	0	0
Measles	11	11	44
Poliomyelitis	18	12	5
Encephalitis	0	1	0
Chickenpox	57	212	107
Typhus	1	2	41
Mumps	28	41	49
Cancer	350	446	218
Pellagra	3	2	4
Pneumonia	58	171	286
Syphilis	709	760	945
Chancroid	4	20	15
Gonorrhea	198	317	464
Rabies—Human cases	0	0	0
Positive animal heads	15	18	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director
PROVISIONAL BIRTH AND DEATH STATISTICS FOR OCTOBER 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During October 1950			October Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	7255	**	**	27.9	29.9	27.5
Total stillbirths	197	**	**	28.4	24.4	25.8
Deaths (stillbirths excluded)	2113	1277	836	8.1	8.3	8.5
Infant deaths:						
under one year	232	112	120	32.0	36.5	33.5
under one month	161	91	70	22.2	27.1	23.3
Cause of Death						
Tuberculosis, 001-019	68	33	35	26.2	34.1	35.1
Syphilis, 020-029	16	6	10	6.2	7.0	9.0
Dysentery, 045-048	1		1	0.4	0.4	***
Scarlet fever, 050						0.4
Diphtheria, 055	2	1	1	0.8	2.3	3.9
Whooping cough, 056	4		4	1.5	0.4	0.4
Meningococcal infections, 057	1	1		0.4	0.4	
Poliomyelitis, 080, 081					0.4	0.8
Encephalitis, 082, 083					0.4	
Malaria, 110-117					1.2	
Malignant neoplasms, 140-200, 202, 203†	223	157	66	85.8	101.2	85.5
Diabetes mellitus, 260	23	15	8	8.8	7.8	16.0
Pellagra, 281	5	2	3	1.9	0.8	1.6
Vascular lesions of central nervous system, 330-334	271	157	114	104.3	86.8	99.2
Other diseases of nervous system, 300-318, 340-398	28	13	15	10.8	11.6	5.1
Rheumatic fever, 400-402	6		6	2.3	2.3	2.3
Diseases of the heart, 410-443	587	395	192	225.9	224.8	225.7
Diseases of the arteries, 450-456	32	23	9	12.3	7.0	10.2
Other diseases of the circulatory system, 444-447, 460-468	25	14	11	9.6	13.2	4.3
Influenza, 480-483	7	3	4	2.7	3.1	3.5
Pneumonia, 490-493	64	38	26	24.6	26.7	24.2
Bronchitis, 500-502	2	2		0.8	1.6	2.3
Appendicitis, 550-553	6	3	3	2.3	3.9	2.7
Intestinal obstruction and hernia, 560, 561, 570	23	13	10	8.8	6.2	2.7
Gastro-enteritis and colitis (under 2)						
571.0, 764	18	6	12	6.9	8.1	5.5
Cirrhosis of liver, 581	14	10	4	5.4	5.4	7.0
Diseases of pregnancy and childbirth, 640-689	11	2	9	14.8	15.2	13.8
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	2		2	2.7	3.8	5.5
Congenital malformations, 750-759	29	17	12	4.0	2.5	3.3
Accidental deaths, total, 800-962	166	122	44	63.9	51.9	66.0
Motor vehicle accidents, 810-835, 960	92	78	14	35.4	20.9	24.2
All other defined causes	358	200	158	138.2	169.0	176.1
Ill-defined and unknown causes, 780, 793, 795	122	43	79	46.9	42.6	51.5

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the October report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

BOOK ABSTRACTS AND REVIEWS

Proctology in General Practice. By J. Peer-man Nesselrod, B. S., M. S., M. Sc. (Med.), M. D., F. A. C. S., F. A. P. S., Associate in Surgery, Northwestern University Medical School; Associate Surgeon, Division of Proctology, Evanston Hospital, Evanston, Ill; Certified by the Central Certifying Committee in Proctology (Founders' Group) of the American Board of Surgery; Commander (MC), USNR. Cloth. Price, \$6.00. Pp. 276, with 64 figures. Philadelphia and London: W. B. Saunders Company, 1950.

This book is designed for the general practitioner but will be found useful by any physician with interest in diseases of the anus and rectum, whether his own or his patients. The book is written concisely and simply, and is easy to read. The first chapter is a review of anorectal anatomy and a classification of the nomenclature of the region.

Throughout the book the emphasis is on diagnosis. The use of the finger, anoscope, and proctoscope are emphasized. A complete description of each examination is given. In each case the reaction of the patient is considered and the author gives us his type of anesthesia used to relax both ends of the patient.

Detailed descriptions of surgical procedures are confined in the main to hemorrhoidal disease and other anorectal diseases of infectious origin. A section on pre- and postoperative care should be valuable to many. This section is enriched by a description of his own experience in arriving at his means of surgical treatment for hemorrhoids. Malignancies, ulcerative colitis and other major diseases are mentioned from a diagnostic standpoint but their treatment is not considered within the scope of this volume.

The reviewer feels that this is an excellent book for any doctor interested in diseases of the anorectal region.

John M. Cameron, M. D.

Psychology: Principles and Applications. By Marian East Madigan, Ph. D., Specialist, Research Department, Milwaukee Vocational and Adult Schools, Visiting Professor, Summer Sessions, University of Arizona, Educational Measurement and Guidance. Cloth. Price, \$4.25. Pp. 385. St. Louis: The C. V. Mosby Company, 1950.

The author, in her preface, indicates that the aim of the book is to provide "a foundation for the learning process and understanding of the biological and social forces affecting behavior and an appreciation of the usefulness of psychology as a means of improving everyday living." The book is divided into four "units." These are labeled "The Nature and Methods of Psychology," "The Essentials of Learning," "The Biological Basis of Behavior," and "Personality and Adjustment." The first two examine in elementary de-

tail the general science of psychology and some of the principles of learning. The latter two units, with a similar lack of comprehensiveness, concern themselves with interpersonal relationships and personality configuration. The author's experience as a personal counselor is immediately apparent. There is no orientation to any specific school of psychology. It is obvious that an attempt has been made to avoid any involved theorization.

The book's appeal is extremely narrow, its format sophomoric, complete with an outline and review questions at the close of each chapter, and its content more suited as a personal guide, and a sound one, for the student nurse in her first year of study. It is not sufficiently diverse in its approach to constitute a sound foundation for additional study in psychology. The illustrations do not always illustrate because their relationship to the text is not always clear or because they are extracted from texts of more advanced psychology of a complexity beyond the scope of this book or its intended reader. If the author has aimed at simplification, she has attained it—perhaps even too well.

Philip S. Bazar, M. D.

Urological Surgery. By Austin Ingram Dodson, M. D., F. A. C. S., Professor of Urology, Medical College of Virginia; Urologist to the Hospital Division, Medical College of Virginia, and to the Crippled Children's, St. Elizabeth's, and St. Luke's Hospitals and McGuire Clinic. With contributions by twelve members of the profession. Cloth. Price, \$13.50. Pp. 855, with 645 illustrations. St. Louis, Mo.: The C. V. Mosby Company, 1950.

In preparing the second edition of this work, Dr. Dodson has made an effort to bring the book up to date, and some changes and revisions have been made. The chapter on "Nephroptosis" has been deleted to some extent. The operation by Dr. Fred Foley for exposure of the upper portion of the ureter has been included, as have the author's methods of ureterocutaneous and ureterovesical anastomosis. Additional operative techniques, including retropubic removal of the prostate, have been included. Urography and cystography by Dr. L. O. Snead have been added to the chapter on "Diagnosis."

In this work the author has been eminently successful in accomplishing his stated purpose, which was to present and discuss those surgical problems arising in everyday urologic practice. The descriptions are clear and to the point. The illustrations in the book are very good and, generally, quite complete which greatly adds to its value. Miss Helen Lorraine, who did the illustrations, is to be complimented on their clarity.

There is no hesitation in recommending this

volume to any physician who is interested in the surgical treatment of urologic conditions. The basic problem in each condition is usually discussed, together with diagnostic features and the indication for operation. The operative technique is then presented, which is generally that one which has served the need best in the author's experience. When indicated, additional operative procedures are given and in such detail that there is no doubt as to what is intended.

"Urological Surgery," as presented by Dr. Dodson, is filling an important place in current literature and those urologists and surgeons who treat urologic disorders will profit from its availability.

John W. Davis, Jr., M. D.

Saw-Ge-Mah (Medicine Man). By Louis J. Gariepy, M. D., Head of the Surgical Staff, Detroit Medical, Surgical and Dental Group. Cloth. Price, \$3.00. Pp. 326. St. Paul, Minnesota: Northland Press, 1950.

Men and women of medicine have long been contributors to the field of distinguished non-fiction. Any number of them have written with charm as well as authority about the famous members of their own and other professions. Many of us are much better informed because of them.

Dr. Gariepy has made some notable contributions of his own to the world of non-fiction. As author of several volumes dealing with his specialty, surgery, he has given his readers the benefit of his long and successful experience in that medical field.

But *Saw-Ge-Mah* is a different kind of book, making him unique, though by no means alone, among medical men. For this is a work of fiction. We are assured, however, that it tells much about what its author has thought and dreamed. While concerned essentially with the trials and adventures of his hero—Dr. Hal Adams—it is largely the story of the average man of medicine. It is a narrative of long hopes and their delayed fulfillment. It tells how the future Dr. Adams struggled to get to medical school and how he struggled to carry on the heavy tasks that any medical student assumes. And the Dr. Hal Adams who emerges from that crucible is the kind of doctor a whole community loves, honors and respects.

One strongly suspects that Dr. Gariepy's Dr. Hal Adams is a pretty good portrait of Dr. Gariepy himself, or at least of the Dr. Gariepy Dr. Gariepy would like to be. And that is a likable, conscientious sort of person.

John M. Gibson

Physiology of the Eye. Clinical Application. By Francis Heed Adler, M. A., M. D., F. A. C. S.; William F. Norris and George E. de Schweinitz, Professor of Ophthalmology, School of Medicine, University of Pennsylvania, and Consulting Surgeon, Wills Hospital, Philadelphia. Cloth. Price, \$12.00. Pp. 709, with 319 illustrations. St. Louis: The C. V. Mosby Company, 1950.

This is an entirely new, rewritten and reorganized text over Dr. Adler's first publication, "Clinical Physiology of the Eye," twenty years ago. It contains all the progress made on such subjects as the dynamics of aqueous humor formation, photochemistry of the retina, and application of electro-physiologic technics to retinal function.

The chapter on ocular motility is entirely the author's newest concept and recently reviewed in *Archives of Ophthalmology* and his fourth edition of *Gifford's Textbook of Ophthalmology*.

This book offers to the student and the practicing ophthalmologist recent findings with reference to the physiology of the eye as obtained from the experimental laboratory, and it applies these facts clinically.

There are 709 pages of ocular physiology, and many excellent illustrations, all of which are written in Dr. Adler's easy-to-read style. The text is divided into 22 chapters which cover the physiology of the structure of the eye, its metabolism, accommodation, photochemistry of vision, etc.

This is the newest and best American text devoted to physiologic ophthalmology.

Karl B. Benkwith, M. D.

Principles and Practice of Surgery. By Jacob K. Berman, A. B., M. D., F. A. C. S., Associate Professor of Surgery, Indiana University School of Medicine; Associate Professor of Oral Surgery, Indiana University School of Dentistry; Chief Consultant in Surgery, Billing's Veterans Administration Hospital, Fort Benjamin Harrison, Indiana; Director of Surgical Education and Surgical Research, Indianapolis General Hospital. Cloth. Price, \$15.00. Pp. 1378, with 429 illustrations. St. Louis: The C. V. Mosby Company, 1950.

This book, a clearly written textbook of the principles and practice of surgery, is intended primarily for students. Throughout the book are many excellent up to date reference lists. It is noted that numerous references are made to the author's works in several fields of surgery. The book is divided into five parts.

The first part embraces general considerations of surgical principles, dealing with the history of surgery, modern surgery and its methods, and pathology as applied to surgery. Among a listing of impressive surgical maxims are: "A good surgeon is an internist who performs operations." "There is no operation which has merit enough to be used on the patient who cannot stand it." "The greater the indications for surgery, the better the results."

Another part—Local Response and General Body Reactions to Injury—deals with repair and healing of tissue, local and systemic reactions to infections, clinical types of reaction to bacterial injury, ulcer, gangrene, tuberculosis, syphilis, and a large group of miscellaneous infections. In this section is a discussion of antibiotics, including such new ones as aureomycin and chloromycetin.

The third part—General Reactions to Injury—deals mainly with the human constitution, inter-

change of body fluids, acid-base balance, hemorrhage and shock. These physiologic and biochemical phenomena are clearly presented, and one is enlightened as to the simplicity of what occurs in the human body in these conditions.

The next section is an excellent general discussion of tumors and cysts.

The final part—Diseases and Injuries of Specific Organs and Systems—is a consideration of the application of surgical principles to the various organs and systems of the body, classified and divided into the integumentary system and adipose tissue, and circulatory, nervous, respiratory, alimentary, skeletal, glandular, reproductive and urinary systems.

The book is profusely illustrated with excellent photographs, drawings, and diagrams. There are many tables, practical outlines, and classifications. Every phase of surgery is covered thoroughly. This is a valuable book and no doubt will find widespread use. It is recommended to all students, and should find a useful place on the reference shelf of all physicians.

H. Leon Rosen, M. D.

Freud: Dictionary of Psychoanalysis. Edited by Nandor Fodor, Associate of the Association for the Advancement of Psychotherapy, and Frank Gaynor. With preface by Theodor Reik. Cloth. Price, \$3.75. Pp. 206. Philosophical Library, New York, 1950.

This is not a dictionary of psychoanalysis in the conventional sense. It is more a compilation of excerpts from Freud's publications elaborating on, rather than defining, many of his terms and concepts. These are approached in alphabetical sequence, and the editors provide with each excerpt the source from which it is drawn.

This torment by morcellation of the continuity of Freud's thinking produces a festinating effect. The predigested condensation of a definition is lacking, and the material at times sprawls with the disjointed awkwardness of a drunk collapsed in a gutter. This book is a reference work, designed as an aid to research workers and as such is not intended as a text.

The preface by Doctor Theodor Reik is full of faint praise for the efforts of the editors and of ill-concealed wrath with the Augean filth of the Freudian stable, befouled, as he believes it has been, by the "misconceptions, distortions and falsifications" that have accumulated in the popularization of Freud's discipline. None will deny the disorder in the stable but the provisions of a broom, if this book is one, hardly serves any significant effect without a Hercules to wield it. This is not a simple key to which the Mysteries of Psychoanalysis will yield themselves. It does, however, have a very definite place in a psychiatric reference library.

Philip S. Bazar, M. D.

AMERICAN MEDICAL ASSOCIATION NEWS

DR. ELMER L. HENDERSON ELECTED EDUCATION FOUNDATION PRESIDENT

Dr. Elmer L. Henderson, Louisville, Ky., surgeon, has been unanimously elected president of the new American Medical Education Foundation, which is raising funds within the medical profession for the unrestricted use of the nation's hard-pressed medical schools.

In addition to this office, Dr. Henderson is serving as president of the American Medical Association and president of the World Medical Association.

He was elected Foundation president at the first annual meeting of the 11-voting members of the not-for-profit corporation.

The members who approved the by-laws of the corporation and elected officers were: Drs. Edwin S. Hamilton, of Kankakee, Ill.; J. J. Moore, Donald G. Anderson, and George F. Lull, of Chicago; Gunnar Gunderesen, LaCrosse, Wis.; Louis H. Bauer, Hemp-

stead, N. Y.; Walter B. Martin, Norfolk, Va.; Harvey B. Stone, Baltimore; Herman G. Weiskotten, Syracuse, N. Y.; Victor Johnson, Rochester, Minn., and Dr. Henderson.

The voting members also will serve as the Board of Directors of the Foundation.

The Foundation was founded at the December, 1950, meeting of the American Medical Association in Cleveland when the Board of Trustees announced an appropriation of one-half million dollars as the nucleus of a fund to be raised by the medical profession to assist medical schools. When the Board announced the appropriation, hope was expressed that the A. M. A.'s contribution would be greatly augmented by gifts from many other sources.

Many contributions have been received so far, including one for \$100,000 from the California Medical Association. California is the first state medical association to make such a contribution, but it is expected that other state societies will follow.

Besides Dr. Henderson, other Foundation officers elected were: Dr. Stone, vice president, and Dr. Anderson, secretary of the Council on Medical Education and Hospitals of the American Medical Association, secretary and treasurer.

Dr. Bauer, chairman of the A. M. A. Board of Trustees, announced at the Foundation meeting that the American Medical Association had agreed to underwrite all of the expenses in connection with the operation of the Foundation.

"The American Medical Association," he told the Foundation, "will absorb all of the expenses of the Foundation so that none of the money contributed will be used to meet overhead. Every dollar contributed will go to the medical schools with no strings attached."

The Foundation announced, too, that a physician who so desires can earmark his money for a specific school. For instance, an alumnus can contribute whatever amount he wishes to the American Medical Education Foundation, specifying that it be given to his medical school.

The Foundation initiated plans to form Foundation committees within the 53 component state and territorial medical societies as well as within each county and district medical society. These committees will canvass the physicians in their own areas for funds.

The aim of the Foundation is to raise within the next few months a fund sufficiently large so that grants can be disbursed to medical schools this year with as little delay as possible.

Dr. Anderson said that each physician is being asked to contribute at least \$100 annually to the Foundation. "Many of the contributions received so far," he said, "have exceeded this figure. Because of rising costs, inflation, fewer large individual benefactions and reduced income from endowments, the medical schools need, without further delay, assistance of the type this fund can give."

The purpose of the Foundation, as set out in the newly-adopted by-laws, is "to promote the art and science of medicine and

the betterment of the public health by providing or aiding in the providing of financial aid to recognized schools or institutions of medical education responsible for the education and training of the medical manpower of the United States."

FIND ESTROGEN THERAPY AIDS ACNE SUFFERERS

Treatment of some forms of acne with estrogens continues to give promising results, reports Dr. Irving Shapiro of Newark in the February Archives of Dermatology and Syphilology, published by the American Medical Association.

Dr. Shapiro, who made his preliminary study in March 1949, found remission of the disease in 60 per cent of his newest group of 25 patients. The estrogenic substance, in the form of a cream, is obtainable only on a doctor's prescription and is not to be confused with hormone creams sold over the counter.

"In 15 patients the results were excellent," he reported, adding that results were good in four cases, fair in three and that three of the patients could not tolerate the cream because of itching, flare-ups and cosmetic disagreeableness.

Ten of Dr. Shapiro's patients were men and 15 were women. Their ages ranged from 17 to 30 years. All patients at the beginning of treatment had the usual signs of an adolescent type of acne—oiliness, pimples and blackheads. The usual methods of treatment, including x-ray and ultraviolet ray treatment and dietary controls, which have been found to be successful in 80 per cent of common acne cases, had been tried without success on this group of patients, Dr. Shapiro said.

The cream was applied to locally affected areas once daily or divided into morning and evening applications. The men used it as after-shave cream and the women as a powder base.

Dr. Shapiro describes this method as "a promising new therapeutic approach to resistant acne vulgaris."

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CANCER OF THE RECTUM

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Cancer occurring in the rectum and rectosigmoid makes up about one half of all large bowel cancer. Nearly three fourths of these lesions occur in the rectum proper and within the reach of the examining finger. The upper limit of the rectosigmoid is arbitrarily defined as the level at which the sigmoid loses its mesentery, and the upper limit of the rectum is placed at the third sacral vertebra. Like carcinoma in other parts of the large bowel, rectal cancer is seen in the young and old but with the greatest incidence in the middle decades of life.

Adenocarcinoma of papillary, colloid, or scirrhous type is the lesion usually observed pathologically. Squamous cell lesions arise from the anus, and a few very rare cases primarily involving the rectum are reported.¹ Malignant transformation of adenomatous polyps seems sufficiently well established to warrant the consideration of these lesions as potentially malignant. This is especially true of the polypoid tumors of heredofamilial polyposis.

Carcinoma of the rectum tends to spread along rather definite pathways, an understanding of which is necessary in the application of surgical therapy. A number of investigators, including Gilchrist and David² and Collier, Kay and MacIntyre,³ have

shown the principal spread to be embolic to the regional lymph nodes above the tumor. Retrograde metastasis occurs when the superior nodes become blocked with tumor, 6 to 7 cm. below the lesion being the limit of downward spread noted by these observers. Intramural spread inferiorly is even less. Lateral spread along the levator muscles and to adjacent tissues is noted and indicates the necessity of wide excision. This is a matter of importance in the poorer prognosis of lesions located below the peritoneal reflexion. Venous invasion was noted in 12.9 per cent of cases by Bacon and Rowe,⁴ and liver metastasis occurs in the advanced lesions.

The classic symptoms of cancer of the rectum do not usually appear in the early lesions, although a careful history will elicit some change in bowel function. The average case will have symptoms for 9 to 12 months before the correct diagnosis is made. The patient often fails to seek treatment until late because he thinks he has hemorrhoids. Indeed, symptomatic hemorrhoids occur in 75 per cent of such patients and a distressingly high number will have been subjected to hemorrhoidectomy before the correct diagnosis is made.

Bleeding is probably the most important single symptom. In the low lying lesions the blood is bright red but small clots of dark blood may also be noted. The higher the lesion, the greater is the proportion of dark blood. The bleeding is usually of small quantity but massive hemorrhage may oc-

1. LeBlanc, Leo J.; Buie, Louis A., and Dockerty, Malcolm D.: Squamous Cell Epithelioma of the Rectum, *Ann. Surg.* 131: 392, 1950.

2. Gilchrist, R. K., and David, Vernon C.: A Consideration of Pathological Factors Influencing Five-Year Survival in Radical Resection of the Large Bowel and Rectum for Carcinoma, *Ann. Surg.* 126: 421, 1947.

3. Collier, F. A.; Kay, E. B., and MacIntyre, R. S.: Regional Lymphatic Metastasis of Carcinoma of the Rectum, *Surgery* 8: 294, 1940.

4. Bacon, H. E., and Rowe, R. J.: Surgery of the Lower Bowel, *J. A. M. A.* 136: 975, 1948.

asionally occur. Anemia is not a usual finding of carcinoma of this segment of colon. The papillary and colloid lesions are obviously more likely to bleed than the scirrhous type. The patient often complains of tenesmus and a feeling of inadequate emptying of the bowel, with a frequent urge to defecate. Outright pain is infrequent until the lesion is extensive. The often-mentioned ribbon stool is also seen only in late cases. Symptoms of obstruction are more common in the lesions of the rectosigmoid area and in the napkin ring scirrhous type. Alternating constipation and diarrhea may be seen in such patients due to impaction of firm feces above a constricting lesion followed by thin stools as the mass is liquefied. Cramping, borborygmus and distention are infrequent and usually late complaints in tumors low in the rectum but often noted in rectosigmoid lesions. Passage of mucus, often blood stained, especially in larger fungating lesions, is an early symptom. None of the early symptoms are pathognomonic of cancer but the majority of instances of rectal cancer can be diagnosed with remarkable accuracy by simple, easily applied, and universally available measures. The tumor can be felt digitally in 70 per cent of the cases and the 10-inch proctoscope will reveal higher lesions. It must be remembered that x-ray will not reveal the low lying lesions, those so easily found by simple digital examination. No physical examination is complete without digital and proctoscopic examination, and certainly any candidate for a rectal operation must have adequate study of the bowel to reveal the presence or absence of malignant lesions. Biopsy of suspicious or questionable areas must be done. The epitheliomata of the anus may be suspected by simple inspection, and diagnosis confirmed by biopsy. Large, deep fissures should be biopsied for possible malignancy.

Occasionally, symptoms due to involvement of adjacent organs may first call attention to the presence of rectosigmoid malignancy. Urinary disturbances due to bladder or prostatic invasion by rectal carcinoma is an occasional initial symptom.

Treatment of any malignant lesion must be so planned as to remove en masse the maximum area of involvement, including metastatic spread, compatible with reason-

able function. Only surgical extirpation suffices for treatment of carcinoma of the rectum at the present stage of knowledge. Other methods such as radiation and cauterization are entirely inadequate and, at best, only palliative.

In consideration of the various methods of surgical therapy, preservation of the sphincters has occasioned considerable difference of opinion. All agree that lesions within a few centimeters of the anus preclude a sphincter-saving operation. In lesions above this level (5 to 8 cm. above anus) a minority of surgeons have maintained that the lesion with its lymphatic spread may be equally well extirpated by one of the methods allowing preservation of the sphincters. Possibly the most popular method of this sort is the anterior resection and low anastomosis advocated by Dixon,⁵ Mahorner,⁶ Wangensteen⁷ and others. The "pull through" type operation finds its most ardent advocates in Babcock⁸ and Bacon.⁹ The abdomino-perineal excision of the rectum, with establishment of an abdominal colostomy as described by Miles,¹⁰ is probably the most frequently used and most universally applicable operation. In a report by Graham¹¹ on a questionnaire sent out to 50 leading surgeons of this country, 82 per cent preferred this type of procedure, a few with minor qualification. It would appear to the

5. Dixon, C. F.: Anterior Resection for Carcinoma Low in the Sigmoid and the Rectosigmoid, *Surgery* 15: 367, 1944.

6. Mahorner, H.: Restoration of Continuity After Resection of the Rectum, *Ann. Surg.* 123: 866, 1946.

7. Wangensteen, Owen H.: Primary Resection (Closed Anastomosis) of Rectal Ampulla for Malignancy with Preservation of Sphincteric Function, *Surg., Gynec. & Obst.* 81: 1, 1945.

8. Babcock, W. Wayne: Radical Single-Stage Extirpation for Cancer of the Large Bowel with Retained Functional Anus, *Surg., Gynec. & Obst.* 85: 1, 1947.

9. Bacon, Harry E.: Evolution of Sphincter Muscle Preservation and Reestablishment of Continuity in the Operative Treatment of Rectal and Sigmoidal Cancer, *Surg., Gynec. & Obst.* 81: 113, 1945.

10. Miles, W. Ernest: The Pathology of the Spread of Cancer of the Rectum and Its Bearing Upon the Surgery of the Cancerous Rectum, *Surg., Gynec. & Obst.* 52: 350, 1931.

11. Graham, A. Stephens: Current Trends in Surgery of the Distal Colon and Rectum for Cancer, *Ann. Surg.* 127: 1022, 1948.

author that this method more nearly fulfills the requirements of a "cancer operation" in this field. It may also be added that en masse removal of adjacent involved organs can be quite satisfactorily included when this procedure is followed.

Treatment of the anal lesions has been by radiation, or abdomino-perineal resection, with or without inguinal node excision. A review by Sweet¹² of cases treated in both ways showed the overwhelming superiority of surgical removal over radiation.

The mortality from adequate surgical therapy of cancer of the rectum is now quite low, a mortality rate well below 5 per cent being reported by the better clinics for procedures of the magnitude of the abdomino-perineal resection of the Miles type. Certainly with the correction of poor nutritional states, blood volume replacement by transfusion, and other such well recognized preoperative measures as bowel preparation with sulfasuxidine and sulfathalidine, and the use of the antibiotics, even poor risks can be brought to a suitable condition for operation. With blood replacement during operation, and careful postoperative supervision of such complications as pulmonary atelectasis, venous thrombosis and electrolyte deficiencies, even the aged may be accepted for the operation without undue hazard. Approximately 75 per cent of cases are resectable and about 60 per cent will have metastasized. The overall five-year cure rate as given by David and Gilchrist¹³ is about 50 per cent, with a 75 per cent cure rate for lesions in which metastasis has not occurred. In lesions above the peritoneal reflexion the results are about 15 per cent better in each category.

Since the majority of patients with cancer of the rectum will have some type of operation which provides an abdominal colostomy, it is not unwise to comment on this problem. No one would prefer a colostomy to a normally functioning anus but it seems a small price to pay if it materially increases the curability rate. A properly made colostomy, with resection of diseased bowel, is not to be confused with a colostomy done with the tumor remaining in place. Pa-

tients with a properly functioning colostomy are able to do almost anything they did previously and bear no social limitations. It is true that it is a problem in the aged and senile but even normal functions are neglected by such persons. It has been the practice of the author to have patients wear some suitable colostomy pouch with a disposable filler for the first few weeks and until the colostomy and surrounding skin are well healed and body strength has been regained. The diet is regulated so as to avoid large amounts of liquid and the patient is instructed to take an enema (using a special convenient apparatus) every second or third day. Very soon the colostomy functions only when stimulated by enema. Thirty minutes spent in taking this enema is the only care required. A small piece of soft gauze held by a light elastic binder is then the only protection needed except on occasions of diarrhea when the safety of a pouch may be desired. As time passes the patient usually improvises and works out his own method of care most suited to his individual preference. Using this method of care, patients have almost invariably commented that colostomy is infinitely less disagreeable than had been expected. It appears a small price to pay for the increased chance of cure.

Face Wounds—One should search the wound carefully for foreign bodies. If road dirt is ground into the skin or wound, such as one sees in a brush bruise, this must be thoroughly removed at the time of the initial surgery. The pigment can usually be satisfactorily eliminated by scrubbing the area with a stiff hand brush. Since this procedure is quite painful, the patient preferably should be asleep. If the brush is unable to remove all the dirt, any residue can be removed by scraping with a curette or knife. The resulting skin abrasion should be covered with vaseline or borofax fine mesh gauze and a pressure type dressing applied. The final results of inadequate removal of these small pieces of road dirt in the skin is the objectional pigmented scar we occasionally see later.

Handle all tissue with extreme care and respect. Heavy clamps and forceps are passe. The skin should be manipulated as little as possible, using small skin hooks when available. Lacerations often cut the skin obliquely, leaving a thin feathery edge on one side. Since it is difficult to obtain a good closure with this type of laceration, we elect to cut each side of the wound with a sharp scalpel to give perpendicular edges.

There is no justification for radical removal of bruised tissue.—*Gurney and Lindgren, Northwest Med. February 1951.*

12. Sweet, R. H.: Results of Treatment of Epidermoid Carcinoma of the Anus and Rectum, *Surg., Gynec. & Obst.* 84: 967, 1947.

A RATIONAL APPROACH TO CANCER OF THE STOMACH

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An attitude of defeatism has settled over the medical profession concerning the prospects of cure of a patient with cancer of the stomach. This attitude has developed because the results previously reported in the treatment of cancer of the stomach have shown less than 5 per cent of five-year survival as an overall average.^{1, 2} These poor results are due in large measure to the extreme difficulty of making an early diagnosis of cancer of the stomach and to the failure of the surgeon to be sufficiently radical and aggressive in his attempt to remove every vestige of the carcinoma from the patient at the first opportunity. The defeatist attitude itself has contributed to the poor results by diluting incentive for aggressive search for early cancer and for aggressive surgical attack upon it. This paper is an effort to introduce new hope based upon a logical discussion of modern trends in the management of this disease.

HOW MAY CANCER OF THE STOMACH BE DIAGNOSED AT AN EARLIER STAGE?

On a statistical basis, cancer of the stomach is a common lesion. All cancer accounts for approximately 14 per cent of deaths in the United States. Of these deaths from cancer, approximately one fourth are due to cancer of the stomach. This disease is almost twice as common in the male as in the female. In a study of a large group of patients with stomach cancer at the Memorial Hospital in New York, Pack reported that 86 per cent were past the age of 45 years.³ One must, therefore, approach the problem of vague indigestion in the patient

past the age of 40 with a *strong index of suspicion* of cancer of the stomach.

The classical clinical picture of carcinoma of the stomach, with emaciation, cachexia, a large epigastric mass, vomiting, and pain, means, usually, a state of hopeless incurability. The diagnosis must be made many months or many years prior to the presentation of this clinical picture. Cancer of the stomach rarely obstructs early, rarely bleeds early, and rarely pains early. For this reason *symptomatic recognition of an early gastric cancer must depend upon a high index of suspicion of such a lesion when confronted with a patient past the age of forty complaining of only the vaguest type of indigestion* or of some seemingly small and insignificant change in digestive habits or appetite or bowel function. Such a patient demands prompt and thorough fluoroscopic and x-ray examination of the stomach by a competent radiologist. In this connection it should be said that the accuracy of the radiologic examination of the stomach will depend in large measure upon the skill of the radiologist and the versatility of his equipment. A stomach examination by a self-appointed radiologist with outmoded equipment cannot be received with the same confidence and satisfaction as an examination by a skillful radiologist with up-to-date equipment. The competent radiologist should find stomach pathology, if present, with at least 95 per cent accuracy.

Study of gastric acidity, gastroscopy, and Papanicolaou study of gastric secretions may afford some added academic precision as to whether the gastric lesion is benign or malignant, but the careful radiologic examination must remain the principal practical diagnostic tool for the recognition of stomach pathology. It must be clearly understood that early diagnosis can be accomplished only if the *family doctor maintains a strong index of suspicion of stomach cancer* in a patient past forty with mild di-

1. Pack, Geo. T., and McNeer, Gordon: End Results in the Treatment of Cancer of the Stomach, *Surgery*, 24: 769-778, 1948.

2. Abrahamson, Robert H., and Hinton, J. William: Gastric Carcinoma, *Surg., Gynec. & Obst.* 84: 481-490, 1947.

3. Pack, George T., and McNeer, Gordon: The Incidence of Gastric Cancer, *Collective Review, International Abstracts of Surgery, Surg., Gynec. & Obst.* 86: 521-534, 1948.

gestive disturbances, and will follow through on his suspicion with prompt, competent fluoroscopic and x-ray study of the stomach. If this plan seems economically impractical, one need only to be reminded that any patient who knows the facts and dangers will be just as willing and anxious to pay for a radiologic examination of his stomach as the doctor would be to have his own stomach examined under similar circumstances. If the examination is negative, the peace of mind is well worth the fee involved; and if it is positive, of course the value is incalculable in dollars and cents.

The second factor of greatest importance in the early diagnosis of gastric cancer is the attitude of the profession toward gastric ulcer. It must be realized that the greatest number of peptic ulcers are situated in the duodenum. Fortunately, for all practical purposes, one can forget the possibility of malignancy when confronted with a duodenal ulcer. This lesion is primarily a medical problem and surgical treatment is to be reserved for certain well established complications such as hemorrhage, perforation, obstruction, or intractability to good medical therapy. The situation in regard to a gastric ulcer is entirely different. *Every gastric ulcer must be considered a possible carcinoma until proved otherwise.* The reason for this attitude is not the danger of carcinoma developing in a previously benign gastric ulcer, because this rarely, if ever, occurs. The cause of alarm when confronted with a gastric ulcer is the impossibility of differentiation of a benign ulcer from an ulcerating carcinoma. The radiologist cannot differentiate them; the gastroscopist cannot differentiate them; the surgeon by palpation with the abdomen open cannot differentiate them; indeed, the pathologist with the specimen in hand cannot always differentiate them without microscopic study. It is true that more accuracy in differentiation is obtained by combining all available diagnostic facilities but every competent pathologist will admit that even he has erred in his evaluation of the gross specimen. If he is deceived with the ulcer in his hands, certainly no in vivo differentiation is unfailing. In no instance is the combined judgment of general practitioner, internist, and surgeon so important as in the management of the patient with a

gastric ulcer. For example, if an individual has an ulcer of moderate size on the lesser curvature of the stomach, is under 40 years of age, and has hyperacidity, combined judgment might advise a period of two to three weeks of intensive medical therapy to see if the ulcer heals. If it does, the patient may then be carefully followed to see that it remains healed. Some malignant ulcers may become obliterated by cancer cells on a medical trial and deceive one into thinking that healing is taking place. However, in the age group of the example postulated, such a plan still seems justifiable. *Such temporization is too dangerous in patients who develop a gastric ulcer past the age of forty. Such patients should all be advised to have a gastric resection as soon as the diagnosis is made.* This also applies to all patients who develop an ulcer on the greater curvature of the stomach because a much higher proportion of these lesions are malignant.

If this attitude toward gastric ulcer seems too radical, the following facts should be considered. In skilled hands, the operative mortality for subtotal gastric resection for benign duodenal or gastric ulcer should not exceed one per cent.^{4, 5, 6} A subtotal gastric resection such as is performed for these lesions is not in any way crippling. In fact, the usual chronic ulcer patient is much more capable of productivity and full activity following a proper resection than he was with the ulcer. With a properly performed operation, the probability of excellent health is greater than 80 per cent and the likelihood of recurrent ulceration not greater than one per cent.^{4, 5, 6}

These excellent results of surgical treatment, even if the ulcer is benign, added to the tremendous advantage of early and radical treatment should the ulcer be malignant, combine to make early surgical treatment of the gastric ulcer both justifiable and extremely desirable. Of all patients operated upon for gastric ulcer at the Mayo

4. Allen, Arthur W., and Welch, Claude E.: Subtotal Gastrectomy for Ulcer, Ann. Surg. 124: 688-705, 1946.

5. Milstein, B. B.: The Late Results of Partial Gastrectomy, Ann. Surg. 133: 1-16, 1951.

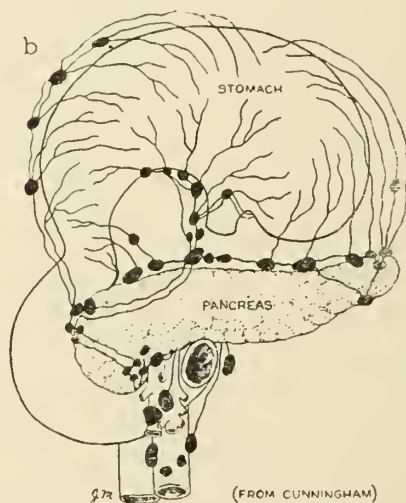
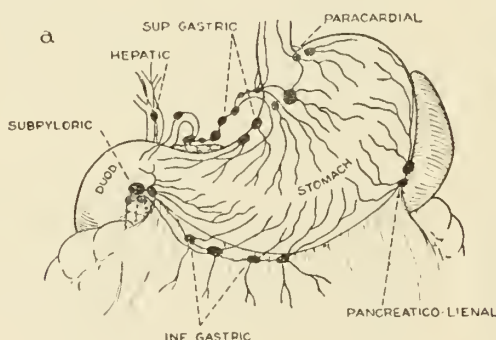
6. St. John, Fordyce B., et al.: Results Following Subtotal Gastrectomy for Duodenal and Gastric Ulcer, Ann. Surg. 128: 3-14, 1948.

Clinic from 1938 through 1942, 13 per cent actually had cancer.⁷ Temporizing with an ulcer of the stomach is an assumption by the physician of unnecessary risk for the patient.

EXTENT OF SURGICAL EXTIRPATION OF THE LESION

Two anatomic and pathologic considerations are important in deciding upon the extent of the initial operation for stomach cancer. These are the distribution of regional lymph nodes and the tendency for such cancer to extend intramurally beyond the gross tumor.

the tendency for gastric cancer to extend intramurally within the stomach for a considerable distance beyond the gross tumor into what seems grossly to be normal stomach wall. Zinninger and Collins⁹ have shown by careful pathologic study of excised lesions that these extensions within the stomach wall vary within wide limits and are unpredictable. In most instances they found the intramural spread to be 0.5 to 1 cm. beyond the obvious gross tumor but in some cases as much as 1.5 to 2.5 cm. of spread was found. The cardiac orifice and the pyloric muscle offer no barrier to



The regional lymph nodes which drain the stomach are located, as shown in Fig. 1, along the left gastric artery and celiac axis, along the splenic vessels and capsule of the pancreas, in the great omentum, in the subpyloric region near the head of the pancreas, in the splenic hilum, and in the region of the gastric cardia. Usually, these nodes are the first to receive metastases from a gastric cancer. Collier, Kay, and MacIntyre⁸ found involvement of these regional nodes in 75.5 per cent of resected specimens. They emphasize the point that it is impossible to tell whether a node is involved without microscopic examination.

The second factor of great significance is

this spread. A lesion in the pyloric antrum is prone to show intramural spread well into the first portion of the duodenum, and a high gastric cancer spreads intramurally into the distal esophagus. With these features in mind it seems clear that *the limited resection has no place in the curative treatment of cancer of the stomach.*

PLAN OF MANAGEMENT OF PATIENT WITH GASTRIC CANCER

Because of the disappointing results of treatment by previous methods and the hope and belief that a more energetic and aggressive attitude toward gastric cancer will save many of these otherwise doomed patients, the following plan of management is suggested:

1. Diagnose the lesion promptly. This de-

7. Lampert, E. G.; Waugh, John M., and Dockerty, Malcolm B.: The Incidence of Malignancy in Gastric Ulcers Believed Preoperatively to Be Benign, Surg., Gynec. & Obst. 91: 673-679, 1950.

8. Collier, F. A.; Kay, E. B., and MacIntyre, R. S.: Regional Lymphatic Metastases of Carcinoma of the Stomach, Arch. Surg. 43: 761, 1941.

9. Zinninger, M. M., and Collins, William T.: Extension of Carcinoma of the Stomach into the Duodenum and Esophagus, Ann. Surg. 130: 557-566, 1949.

mands an ever-present high index of suspicion of gastric cancer in the patient past the age of forty who has the slightest change in digestive habit, and a firm resolve always to satisfy this suspicion by prompt, competent x-ray examination of the stomach. One must also view a gastric ulcer with alarm and consider such a lesion as a cancer until proved otherwise.

2. Arrange for immediate surgical treatment of the patient by a surgeon who has the training, skill, facilities, and courage to undertake a radical curative operation at the very first opportunity.

3. After preoperative preparation, the surgeon's first duty at operation is to make certain of the diagnosis. Sometimes this is obvious, but in many ulcerative lesions the diagnosis will have to be established by frozen-section examination of the lesion. It is necessary to determine this because the operation for benign gastric ulcer is not a sufficiently radical operation for cancer. The first step in a questionable case should, therefore, be to open the stomach with care to avoid spillage, take a biopsy from the edge of the lesion, close the gastrotomy wound, and completely redrape, changing gowns, gloves, and discarding the instruments used for biopsy. By this time the frozen-section diagnosis will be available and the operation may proceed as indicated.

4. When the diagnosis of cancer is established, the same radical approach that is utilized in treatment of cancer of the colon, breast, thyroid, or rectum is indicated. This means a wide resection of the regional lymph nodes. Picking out individual, enlarged regional nodes separately is not a proper procedure and should never be done in a curative operation. The proper procedure is to elevate the entire omentum and detach it from the colon, leaving it attached to the greater curvature of the stomach. One may then palpate the lesser peritoneal cavity to determine finally that the lesion is or is not resectable, and, if so, whether portions of the body of the pancreas or mesocolon are attached to the tumor so that they will require resection. The operation then proceeds, with removal of all nodes and tissue in the subpyloric region over the

head of the pancreas leaving them attached to the pylorus and duodenum. The right gastric and right gastroepiploic arteries are ligated at their origins so that nodes which accompany them may remain with the specimen. After clearing the duodenum, it is then transected at least one inch below the pylorus and the duodenal stump carefully closed. The entire gastrohepatic ligament, with its nodes, must come with the specimen, which means ligation of the left gastric artery near its origin from the celiac axis. With lesions on the greater curvature or posterior wall and with some lesser curvature lesions, the splenic artery should also be ligated at its origin and the entire splenic vascular tree and spleen removed en bloc with the stomach. The upper limit of resection of the stomach is a matter of debate at present. Lahey,^{11, 12} Longmire,^{10, 13} and others have proposed total gastrectomy for all gastric cancer, whereas Allen¹⁴ and others are not willing to make this a routine procedure because of the nutritional problems which often follow total gastrectomy and which rarely follow even a very radical subtotal resection. After consideration of the routes of lymphatic and intramural spread it would seem probable that an 80 per cent subtotal resection, with wide block node dissection as described above, would provide an adequate cancer operation for the small prepyloric cancer but that only total gastrectomy could be considered a proper cancer operation for any lesion higher than the prepyloric antrum. The future may prove that even the early prepyloric cancer demands total gastrectomy to give the best long term results but for the moment the above suggested plan seems logical. For high gastric lesions the thoracic route is often necessary to insure a sufficiently high esophageal resection.

These technical decisions must be made

11. Lahey, Frank H., and Marshall, S. F.: Should Total Gastrectomy Be Employed in Early Carcinoma of the Stomach, *Ann. Surg.* 132: 540-564, 1950.

12. Lahey, Frank H.: Total Gastrectomy for All Patients with Operable Cancer of the Stomach, *Editorial, Surg., Gynec. & Obst.* 90: 246-248, 1950.

13. Longmire, William P.: Total Gastrectomy for Carcinoma of the Stomach, *Surg., Gynec. & Obst.* 84: 21-30, 1947.

14. Allen, Arthur W.: Discussion of Paper by Lahey and Marshall, *Ann. Surg.* 132: 561, 1950.

10. Scott, H. W., and Longmire, Wm. P.: Total Gastrectomy, *Surgery* 26: 488-498, 1949.

by the surgeon at the time of the first operation. They have been discussed in some detail to show that this is an operation which requires careful judgment, thorough training, technical skill, all the modern facilities of anesthesia, pathologic aid, and blood replacement; as well as the courage and physical stamina on the part of the surgeon to be willing to pursue an aggressive campaign against this previously 95 per cent fatal disease. The old rule that a big operation should be performed for a small early cancer was never more applicable than here. Otherwise, a patient with an early cancer may have his chance of cure destroyed by a limited operation by a surgeon not properly equipped for this type of work.

In the past, because of the limited training and skill of the operating surgeon, because of lack of facilities for this radical surgery, because of the absence in the profession generally of any belief in the efficacy of radical treatment of stomach cancer, or because of a fear of crippling mutilation based upon lack of experience with the procedure, a truly radical approach to early stomach cancer has rarely been practiced. Since past results are so poor by less aggressive methods, it seems time to adopt a new approach. It is true that the totally gastrectomized patient will have more nutritional crippling than will the subtotally resected patient. If there should prove to be a substantial increase in chance of cure, however, any rational patient will be happy to accept some degree of physiologic disturbance in order to attain ultimate cure. This is especially true since the nutritional disturbances which follow the most radical total gastrectomy are usually not incompatible with a comfortable productive life, including normal work.^{10, 11} In expert hands the mortality of this procedure does not exceed 10 per cent,^{10, 11, 15} and this rate should be even less when the operation is applied to patients with earlier lesions.

WHAT RESULTS MAY BE EXPECTED?

It is regrettable that a chart cannot be presented to show the five-year survival rate in a significant group of patients with

early carcinoma of the stomach who had been subjected to the type of radical resection discussed. This is not possible because such statistics are not yet available due to the rarity of early diagnosis and the too recent adoption of the radical surgical attack on early lesions. Some statistical direction guides are available, however. Pack and McNeer¹ report that 34.7 per cent of patients who had stomach cancer have survived more than five years following a radical subtotal gastrectomy, including block resection of the regional nodes and adjacent involved organs. Of this group, the five-year survival rate with uninvolved lymph nodes was 42.8 per cent and that in which lymph nodes were involved was 24.2 per cent. Lahey¹¹ reports that 21.9 per cent of 127 patients who had radical total gastric resection for very advanced gastric cancer survived 3 years or longer. Scott and Longmire¹⁰ report that, of sixty-three patients who have been treated by radical total gastrectomy for cancer, eleven patients (18%) are alive, with no evidence of recurrence for periods ranging from 14 to 54 months. It is particularly important to point out that all of the patients reported by Lahey and half the patients reported by Scott and Longmire had very extensive gastric lesions. It seems reasonable to assume that the same radical methods applied to the small early gastric cancer will save a much higher proportion of these patients.

SUMMARY AND CONCLUSIONS

A discussion of the recent trends of management of gastric cancer has been presented. Time will determine the final efficacy of the methods proposed. Meanwhile it would seem to be clearly the duty of the medical profession to clear away the old attitudes of hopelessness and helplessness; aggressively to seek out early stomach cancer and see that it is radically removed at the first opportunity. Only in this way may one logically attack this previously deadly disease.

The patient with tuberculosis must cure himself. The final conquest or destruction of the tubercle bacilli is a victory of the body itself. Physicians guide and assist the resisting forces of the diseased body against the rapid multiplication and spread of the invading germs. The general measures of rest and good nutrition remain basic in the treatment.—*California Med.*, John H. Skavlem, M. D., December 1950.

15. Wangenstein, Owen H.: Technical Suggestions in the Performance of Total Gastrectomy, *Surgery* 25: 766-775, 1949.

CARCINOMA OF THE COLON

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Among carcinomas of the intestinal tract the colon is a more frequent site of the primary lesion than the rectum, and is second only to the stomach. Almost 10 per cent of all cancer deaths are attributable to malignant tumors of the colon. At first glance a mortality rate of this magnitude would seem to be at variance with the clinical success generally associated with colon resections. The discrepancy is due, in large part, to late diagnosis.

Perhaps the greatest factor in delayed diagnosis is the difficulty of performing complete colon studies as part of the routine physical examination. Many definitely pre-cancerous lesions may be found in young adults, and 5 per cent of all colon cancer occurs before the age of 40. The disease is common in the fifth decade and reaches its peak incidence between the ages of 50 and 60. Women are affected more frequently than men. The greater lethality of the disease in the younger age group seems to be due more to late diagnosis than to any special virulence of the tumor in youth.

ETIOLOGY

The etiology of carcinoma of the colon is unknown. There are a number of predisposing or associated diseases suggesting an etiologic relationship. These are: (1) polyps, solitary or multiple; (2) papillomas; (3) familial polyposis of the colon; (4) chronic ulcerative colitis; and (5) diverticulitis. The pertinent features of the relationship of these diseases to carcinoma of the colon are so important that they are worth separate consideration.

Adenomatous polyps are the commonest benign tumors of the colon in all age groups. They are found most commonly in the sigmoid. Discrete polyps are found incidentally in about a third of all colons resected for carcinoma. There is considerable reason to believe that malignant degeneration of polyps is etiologic in many carcinomas.

Single polyps are noted with considerable frequency in children. Histologically the polyp may appear to be composed of proliferating mucosal masses, or show complex glandular differentiation. It seems likely that they are sessile in their incipency, but develop a pedicle as a result of continued peristaltic traction. Professional attention is usually directed to the polyps because of symptoms of bleeding, acute or chronic obstructive symptoms, or intussusception. They may be identified by proctoscopic examination or by means of the double contrast enema of barium and air. Demonstration of a polyp carries with it the obligation for histologic study. For polyps situated above the peritoneal reflection it is unwise to attempt proctoscopic removal for fear of perforation of the bowel. The prepared colon should be opened transperitoneally and histologic study of the polyp performed. If there is evidence of malignant degeneration the lesion should be treated as a cancer. In order to avoid needless resection of the colon it is important to demonstrate that malignant differentiation involves the base of the pedicle and not just the tip alone.

Papilloma of the colon is almost exclusively a disease of adults. Papillomatous lesions do occur in children but on histologic examination these will be found almost invariably to be benign lymphoma of the rectum or rectosigmoid. The true papilloma of the adult usually has a broad flat base and, on histologic examination, shows a branching structure covered with undifferentiated epithelium. Superficial biopsies will always be reported as carcinoma, and, indeed, large papillomas almost always become malignant. A search for papilloma should be undertaken whenever gross or occult blood is demonstrated in the stool. Proctoscopy and double contrast enema are the most useful localizing evidence of the existence of a papilloma. In patients with persistent occult blood in the stool and no proctoscopic or roentgenologic evidence of any disease, it may be necessary to explore the patient with a thoroughly prepared

colon, palpating the entire length of the colon. Any suspiciously thickened areas should be investigated by opening the colon and direct inspection. Once a papilloma is identified it should be removed widely, with a careful histologic study of its base. If the malignant process extends out into adjacent normal mucosa there should be a segmental resection of the involved portion of the bowel.

At least one-half of the patients with *familial polyposis* of the colon will die prematurely of carcinoma of the colon if untreated. There is strong evidence of the familial nature of this disease but the process makes its appearance most usually in the second or third decades of life. Isolated cases do occur but should be distinguished from the pseudo-polyposis complicating chronic ulcerative colitis. The most frequent initial symptoms are bleeding and diarrhea. The polyps are usually so numerous that they are revealed by the simplest investigation. The widespread distribution of the polyps throughout the entire course of the colon serves to distinguish this disease from multiple polyposis of the rectosigmoid. Total colectomy and abdominoperineal resection of the rectum with permanent ileostomy now constitute the treatment of choice in this disease. The number of polyps is so great as to preclude exact histologic study of every polyp; hence, it is desirable to perform routine lymph node dissection at the time of total colectomy. Two or more carcinomatous polyps are not infrequently demonstrated on final study of the removed specimen. Even as recently as five years ago it was common practice to preserve the rectal ampulla and to perform an ileoproctostomy following resection of the colon. It was then advised that proctologic examination of the rectum be performed at intervals of six months, with fulguration of recurrent polyps. The incidence of carcinoma of the rectum in these cases treated by preservation of the rectum has led most surgeons to believe that it is far safer to remove the rectum and perform a permanent ileostomy at the time of colectomy.

Chronic ulcerative colitis appears to carry with it a definitely increased risk of carcinoma of the colon in the later stages of the disease. Recurrent ulceration and ir-

regular healing result in the formation of pseudo-polyps. The presence of these lesions in any great number makes it difficult to distinguish between inflammatory pseudo-polyps and premalignant adenomatous polyps. Although some patients with ulcerative colitis can be satisfactorily treated on a medical regimen, it is now generally conceded that the onset of scar changes in the colon is an indication for the removal of the colon. Two factors have contributed most significantly to an earlier acceptance of colectomy as the treatment of choice in ulcerative colitis. The first of these is the availability of a satisfactory ileostomy bag; the second factor is the realization that after removal of the colon and the rectum there is progressive "colonization" of the ileum with the passage of more solid fecal material through the ileostomy.

Diverticulitis may be indistinguishable from carcinoma of the colon, and there is some reason to believe that patients with chronic diverticulitis and frequent exacerbations are especially prone to develop carcinomas at the site of the diverticulitis. The passage of blood occurs in approximately one-sixth of the patients with diverticulitis and is not in itself a diagnostic feature for differentiation between carcinoma and diverticulitis. It is frequently impossible to differentiate between diverticulitis and carcinoma of the colon by any means other than histologic examination of the excised specimen. Increasing acceptance of the opinion that complicated diverticulitis warrants surgical excision has tended to minimize the hazards of treating diverticulitis expectantly. The possibility of an underlying carcinoma should be entertained whenever the diagnosis of diverticulitis is considered.

CARCINOMA OF THE RIGHT COLON

Carcinomas of the cecum and right half of the colon, unlike carcinomas of the colon elsewhere, rarely produce signs of intestinal obstruction. Anatomically so situated that successful resection is favored, these tumors still carry with them a high incidence of fatality because of the extreme variability of the early symptoms. Cecal carcinomas characteristically remain silent for many months. When symptoms do appear there is often nothing more than transient abdominal distress limited rather sharply to the

right lower quadrant. In the days when it was not uncommon to operate for "chronic appendicitis" early cancers of the cecum were occasionally discovered. Indeed, it seems likely today that if every patient considered as having chronic appendicitis were held suspect for a diagnosis of carcinoma of the cecum until proven otherwise earlier diagnosis might be achieved. Also it should not be forgotten that gangrenous appendicitis may complicate cecal carcinoma. It is for this reason that the cecum should be carefully palpated at the time of appendectomy in every adult. Small bowel obstruction due to infiltration of the ileocecal valve is usually a late complication of carcinoma of the cecum. Hence, the abdominal discomfort arising from a carcinoma of the cecum is rarely colicky in nature.

In general the most frequent symptoms of carcinoma of the right colon are those associated with the presence of an ulcerating neoplasm anywhere in the gastrointestinal tract. Anorexia, nausea, vague epigastric distress, fever, intermittent leukocytosis, and frequently profound anemia are the usual symptoms. These symptoms may so predominate that the patient himself is not aware of any localization of discomfort in the right lower quadrant. Weight loss and loss of strength occur commonly.

There is often an alteration in bowel habits. This is usually in the direction of recurrent bouts of mild diarrhea, although occasionally constipation is noted. Pus and blood are found in the stool; the blood is usually occult and not demonstrable on gross examination.

A mass is palpable in the right lower quadrant in about one-fourth of the patients. It may be fixed or movable; it tends to be hard and somewhat nodular. At times it requires considerable diagnostic acumen to distinguish between a primary carcinoma of the right colon and a cecum filled with feces as the result of an obstruction in the left half of the colon.

Fortunately, the diagnosis of carcinoma of the cecum and right colon is made relatively easily by barium studies with, or without, air contrast. The tumors tend to be polypoid in character, are usually well differentiated, and tend to remain localized for a considerable period of time.

Carcinomas of the right half of the colon

are extremely favorable for surgical excision. Even when the tumor has spread to involve contiguous organs or muscles, radical resection is entirely feasible and successful. The standard operation is resection of the terminal ileum, the entire right colon, and the proximal half of the transverse colon. Continuity of the bowel is restored by an end-to-end ileo-transverse colostomy. Three-fourths of the patients may be expected to survive for five years or more.

CARCINOMA OF THE LEFT COLON

Carcinomas of the left half of the transverse colon, of the descending colon, and of the sigmoid and rectosigmoid tend to be cicatrizing rather than polypoid. This annular constriction, and the more solid character of the feces in the left colon, tend to produce obstructive symptoms early. Colicky lower abdominal pain and constipation are the common complaints. Intermittent diarrhea is prone to follow the use of laxatives. Streaks of gross blood may be implanted in the feces as the constipated stool dilates and tears the cancer in its passage through the point of partial obstruction. It is quite common for tumors of the transverse colon to be palpable, but lesions of the splenic flexure are remote and practically never palpable. Pericolic abscesses complicating carcinoma of the splenic flexure may be responsible for obscure fevers.

The diagnosis of carcinoma of the left colon can usually be confirmed by proctoscopic or fluoroscopic examination of the colon with barium. The tumor is most apt to be missed in the flexures of the colon or in areas where redundant sigmoid overlays other portions of the colon. For these purposes it is frequently desirable to resort to air contrast technics. It is imperative to avoid meticulously the administration of barium by mouth to a patient with a suspected obstructive lesion of the colon. All barium tends to become impacted proximal to the annular constriction and complicates the ultimate surgical management quite considerably.

The surgical treatment of carcinoma of the left half of the colon is less successful than for the right colon. This is true because of the earlier tendency of the cancer to spread. Direct invasion of the wall of the colon occurs with seeding of adjacent viscera and structures. Embolization of re-

gional lymph nodes favors ascending and retrograde lymphatic extension. Tumor cells become implanted in the liver through lymph-borne and blood-borne metastases. Systemic carcinomatosis is uncommon, but the incidence of pulmonary metastases is sufficiently great to warrant routine x-ray examination of the chest prior to final evaluation of the patient. In evaluating the patient preoperatively it is also desirable to demonstrate patency of the ureter by proper pyelography.

The surgical approach to carcinoma of the left colon is complicated by the coexistence of obstruction. Whenever practical it is preferable to relieve the obstruction, and defunction the entire left colon by a proximal transverse colostomy. Although a right-sided scar may subsequently complicate indicated surgery for gallbladder disease, it is preferable to utilize the right half of the transverse colon to establish this colostomy in order to facilitate total resection of the left half of the colon upon indication. The experience with cecostomy for the decompression of an obstructed colon has been disappointingly poor. A cecostomy does not permit adequate cleansing of the proximal colon.

Up until recently it has been common practice to perform segmental resection of the sigmoid, descending colon, or splenic flexure as a total operation for carcinoma in any one of these segments. The mortality rate for these procedures has been somewhat under ten per cent. Of the patients surviving segmental resection, approximately fifty per cent are living after five years. In an effort to increase the five-year survival figure to a level more nearly comparable with that of the right colon, it has been urged recently by many surgeons that the entire left colon be sacrificed whenever any segment is involved. This more extensive resection is followed by restoration of continuity by anastomosis of the right half of the transverse colon to the rectosigmoid. Mortality and morbidity rates do not appear to be significantly influenced by this more extensive operation, nor are the postoperative sequelae of any greater concern. It is too early, however, to assess any ultimate improvement in salvage. The study of the resected specimens suggest that this is a

logical forward step and worthy of further investigation.

FINAL CONSIDERATIONS

Certain pertinent features in the management of carcinoma of the colon have been presented. The malignant potentiality of benign polyps, papillomas, familial polyposis of the colon, chronic ulcerative colitis, and diverticulitis have been discussed. The diagnostic features of carcinoma of the right colon and carcinoma of the left colon have been presented.

Students of the problem of gastrointestinal carcinoma are becoming increasingly convinced that these tumors may exist for two years before presenting localizing symptoms. If earlier diagnosis is to be achieved it is important that all age groups be suspected of carcinoma, and that the physician be prepared to investigate for carcinoma upon the indications of systemic disability. To wait for the development of localizing symptoms is to postpone investigation for too long a time. It is believed that examination of the stool for gross and occult blood, digital rectal examination, and proctoscopic examination should be a routine part of every examination. Every patient with a guaiac positive stool should have a thorough investigation of the gastrointestinal tract by barium studies. In the event of negative barium studies and a persistently positive guaiac stool, surgical exploration of the properly prepared gastrointestinal tract should be given serious consideration. The best prophylaxis of carcinoma of the colon is an aggressive approach to the problem of adenomatous polyps and papillomas.

Epilepsy—In spite of much progress in understanding the physiologic basis of epilepsy, and in developing of new anticonvulsive drugs, the care and treatment of epileptics will be incomplete without additional guidance of the patient, without dispelling his anxiety by giving him understanding of his illness, by fostering his feeling of self-esteem and by changing public attitudes. This cannot be done by the private practitioner alone. Physicians, particularly neuropsychiatrists, and also psychiatric social workers will have to campaign through press, radio, and lectures to the public and through various medical societies. Their mission will be to acquaint the medical practitioner with some of the problems of epilepsy which otherwise may escape his interest or attention.—Revitch, J. M. *Soc. New Jersey*, March 1951.

SURGICAL TREATMENT OF INTRA-ORAL CANCER

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Within the last decade the applicability of surgery to the treatment of malignant lesions of the head and neck has been widened markedly. This paper will discuss briefly some of the factors leading to this change, and the present status of treatment of five of the more representative lesions. Epidermoid cancer of the tongue, floor of the mouth, buccal mucosa, and upper and lower gingiva will be considered.

The earliest treatment of these tumors was surgical, but surgery resulted in such a high mortality and low cure rate as carried out at that time that the advent of radiotherapy saw a complete change in treatment. For many years most intra-oral lesions have been treated with irradiation in some form (x-ray, radium, or radon seeds). Surgery has been relegated to a minor role, being usually reserved for the treatment of tiny lesions, irradiation recurrences, and lymph node metastases. Although some clinics have always been advocates of the surgical treatment of lymph node metastases, this has by no means been universally accepted.

GENERAL CHARACTERISTICS OF INTRA-ORAL EPIDERMOID CARCINOMA

Histology

Intra-oral carcinomas are for the most part epidermoid in histology but they vary markedly in the degree of differentiation. The least differentiated may show no keratin formation, and may exhibit metastases in a very large percentage of cases, whereas the more completely differentiated lesions may tax the pathologist to make an absolute diagnosis of malignancy. The "verrucous carcinoma" is histologically merely extensive hyperplasia, but it will invade bone and in a small percentage of cases metastasize to the regional lymph nodes. Clinically it is undoubtedly a true cancer but the prognosis should be excellent if treated properly.

Metastases

A large number of epidermoid cancers spread to the regional lymph nodes by tumor emboli. Because of this fact certain lesions can be cured by discontinuous operations which do not disturb the tissue lying

between the primary lesion and the metastatic disease. For example: An epidermoid cancer of the buccal mucosa may be excised or treated with x-ray. One year later a lymph node may appear in the upper cervical region and be permanently controlled by an upper neck dissection. Although this type of therapy is a satisfactory solution to certain problems, it has not proven to be the answer in many of the more aggressive tumors.

It is well established that en bloc removal of the primary focus and the metastases is the treatment of choice in many carcinomas, and this is probably just as true in cancer of the oral cavity. Where results of discontinuous or combined treatment have not been good further extension of wide en bloc surgical extirpation is indicated. Cancer of the tongue and floor of the mouth must be considered in this category as long as the prevailing methods do not prove more effective. With surgical removal of the jaw there is section of branches of the mandibular division of the trigeminal nerve so that patients often get relief of pain even when cure is not established. Clean surgical wounds heal per primam, and reconstruction is facilitated when required because tissues outside of the zone of excision are not affected.

Multicentric Origin

Many cancers of the oral cavity are multicentric in origin, and as soon as one is cured another appears in a different location. With young patients who have a normal life expectancy of many years, careful thought must be given to surgical removal whenever possible in order to avoid secondary changes due to irradiation.

Leukoplakia

Leukoplakia seems to be a definitely precancerous lesion. There are two general types grossly, and these are often mixed. The superficial filmy type can be safely watched, but the piled up, thick variety should be biopsied and then removed. Very thick areas can be removed surgically, and the thinner areas can be peeled off with the actual cautery. If this is done gently, intact

epithelium is usually left after removal of the white area.

Irritants

Syphilis, ill-fitting dentures, irregular and decayed teeth, and the use of chewing tobacco and snuff are associated with the development of intra-oral cancer in a respectable percentage of cases. Prevention of these conditions, and correction once they occur, is very useful in lowering the incidence of carcinoma.

Diagnosis

Any sore that does not heal in 2 weeks should be suspected of being malignant. There need be no hesitancy in biopsy since this is apparently a harmless procedure and usually leads to a correct diagnosis. The neck should be carefully palpated for enlarged lymph nodes which may be the site of metastatic cancer. Any patient who develops a mass in the neck as the first manifestation of disease should have a careful examination of the oral cavity, nasopharynx and larynx repeatedly.

Many intra-oral lesions present as a lymph node metastasis in the neck, and it is only after repeated complete examinations of the upper air passages that one is justified in ruling out an intra-oral focus as the primary tumor site. One examination by a competent observer is merely the start in the search. Primary carcinomas of the tongue, larynx, and nasopharynx have been found months or years after the metastatic manifestation was first noted. Since intelligent treatment is predicated upon accurate diagnosis, it is of vital importance to establish the true extent of disease prior to any therapy. Many poor results in both surgical and radiotherapeutic control of malignancy may be ascribed to incomplete diagnosis.

It is just as necessary to find the secondary deposits of tumor when the primary is obvious as it is to locate the primary cancer when the metastases are the presenting complaint.

Examination of the mouth requires removal of plates and partial dentures. Any system which the doctor prefers may be followed but it is imperative to have some regular sequence of exposures. Otherwise a large lesion under the tongue on the floor of the mouth may be missed. Anyone who

is dealing with tumors of the head and neck should be able to perform an adequate examination of the nasopharynx and larynx. If the surgeon does not have this experience personally he should call in a competent observer before embarking on a long course of treatment. It is highly desirable that all persons giving radiotherapy be able to check on the tumor extent themselves and not be shackled to the opinions of another physician.

Ultimate Course

Those lesions of the mouth which are untreated or do not respond to therapy usually cause the exodus of the patient by effect produced locally. Death itself is caused by hemorrhage, malnutrition, pneumonitis, lung abscess, respiratory obstruction, paralysis of vital structures, and intercurrent disease secondary to the general debility. Metastases below the clavicles are not usually important.

As in death caused by most cancers, the end is miserable in the extreme, and any thing that can be expected to prolong worth-while living or effect a permanent cure is to be considered. Useless mutilation and extensive irradiation with resulting mucositis and no hope for real improvement must be avoided. It is very difficult to know where to draw the line but it is a tragedy to deny the patient a real chance of cure when it is present.

SURGERY vs. RADIOTHERAPY

There are certain fairly well recognized indications for radiotherapy in the treatment of these tumors as follows:

1. Poorly differentiated epidermoid cancers, lymphomas and lympho-epitheliomas.
2. Inaccessible areas, such as the nasopharynx.

Surgery seems to have the edge in the control of tumors with the following characteristics:

1. Bone involvement.
2. Well differentiated epidermoid carcinomas.
3. Metastatic epidermoid cancer.
4. Lesions which have recurred following adequate radiotherapy.
5. Tumors of salivary gland origin, ameloblastomas, sarcomas and adenocarcinomas.

Radiotherapy and surgery may be used to supplement each other but there is little unanimity of opinion as to how this should be done. The fact that much of the surgery of these tumors has been in the hands of men who were not particularly interested in the field has not contributed to its expansion. As the field broadens more individuals will become familiar with it and results will improve. It takes real teamwork on the part of the surgeon and the radiotherapist to give the patient the best chance of cure. When each is fighting hard for his specialty without regard for the benefits to be offered by the other the best results are not obtained.

ESCHAROTICS

Escharotics are mentioned only to be condemned. Mohs has gotten some good results by a very careful, time consuming method of fractional escharotic therapy, but most workers in this field believe that his results have nothing to offer over surgery or irradiation except the preparation of more microscopic slides and the employment of more technicians. The majority of people who use cancer pastes are quacks whose aims are reprehensible and results abominable.

ELECTROSURGERY vs. "COLD KNIFE" SURGERY

"Electrosurgery is the application of high frequency alternating electric currents for the destruction and removal of pathological tissue or for the cutting of normal tissues to approach a disease area with diminished bleeding." (Kelly and Ward, 1932)

Electrosurgery has the following disadvantages:

1. Tissue is frequently so charred that:
 - A. Tumor specimens may not be recognizable.
 - B. Tumor limits in the specimen cannot be determined.
2. Healing is retarded.
3. Dissection close to large blood vessels or vital nerves cannot be done with the cutting current.
4. Tissue beyond the actual area of dissection is destroyed.

Electrosurgery has these advantages:

1. Hemostasis is easier.
2. Certain areas are more easily ap-

proached, particularly for coagulation, than for excision.

The "cold knife," while requiring more careful technique, is superior in the following respects:

1. Dissection is done through tissue that is unchanged and the gross identification of tumor is better.
2. The tissue is not charred and:
 - A. The tumor can be accurately identified.
 - B. Tumor limits in the specimen can be easily determined.
3. Healing is better. Defects can be closed or grafted immediately in many cases.

4. Dissection is more accurate close to large vessels and important structures.

After consideration of these factors a surgeon can select the means most suited to his ability and the patient's requirements. A surgeon who rarely uses the cautery is more likely to remove structures by anatomical block dissections than one accustomed to the cautery, and this is of considerable value in many cases. The factor of tumor transplants in the wound is a difficult one to be dogmatic about, but there is little to prove that electrosurgical removal is attended with less chance of tumor being transplanted in the wound than by any other method. So far this seems to be a philosophical argument. There are experienced surgeons doing a large volume of this type of tumor work who rarely use the cautery to cut or coagulate.

GENERAL FACTORS IN EXTENSIVE HEAD AND NECK SURGERY

The same factors which have made extensive surgery of any type feasible are important in widening the scope of surgery about the head and neck. These are:

1. Careful technique. This is not new but deserves reemphasis. In all surgery good exposure is necessary for meticulous, accurate dissection. Such exposure in the neck depends on good hemostasis. It is impossible to identify and preserve or sacrifice the many vital structures encountered in extensive neck operations unless the field is dry and clean.
2. Blood transfusions. Because of the

great vascularity of the head and neck there is blood loss of 500 to 2500 cc. in extensive resections. Of course this varies with the magnitude of the procedure, the skill of the surgeon, and the amount of surrounding inflammation. Regardless of the amount lost, an attempt should be made to replace it as bleeding occurs. Replacement delayed until the patient is in shock is *too late*. Giving blood arterially or under high pressure should be avoided if the blood pressure can be maintained any other way, and it usually can. Letting the blood pressure sag down by an uncorrected blood loss, and boosting it back up rapidly by forced pressure transfusions, puts a tremendous strain on an aged heart that may cause pulmonary edema, coronary occlusion, and death. Provided a patient is properly prepared for surgery, and blood loss is corrected as it takes place, the blood pressure usually will not fall even during a long, difficult, and bloody operation.

3. Antibiotics. Many patients who have intra-oral lesions are already debilitated,



Fig 1. This shows scar left by Kocher "T-incision." The horizontal limb is parallel to and 2 cm. below the body of the mandible. It extends from the mastoid process posteriorly to across the midline anteriorly. The vertical limb starts at the midpoint of the horizontal incision and goes down to the clavicle. An incision of this type is generally used for radical neck dissections.

and with extensive surgery, contamination of the upper air passages, and occasional postoperative tracheotomies they are prime candidates for pneumonia. This is obviated to a large degree by the antibiotics as well as by specific measures enumerated under postoperative care. Localized infections about the neck are not too frequent but chemotherapy helps prevent them.

4. Endotracheal anesthesia. In order to perform a long and wide operation with the maximum of safety 2 criteria must be met:

- (1) The patient must be asleep.
- (2) There must be an adequate airway.

If there is to be surgery within the mouth there is one more requirement:

- (3) The operative field with attendant blood must be sealed off from the respiratory passages.

All of these obligations can be best met by a general anesthetic and an endotracheal tube. When there is to be intra-oral surgery a pack in the back of the pharynx will seal off the larynx. Sodium pentothal may be used, provided the throat is anesthetized with a topical anesthetic such as pontocain, or the patient is given curare intravenously prior to intubation. Any gaseous anesthetic may be administered as desired.

PREOPERATIVE CARE

The following steps should be taken to insure satisfactory operative results:

1. Hemoglobin values should be brought to normal values by transfusions.
2. Cellulitis or lymphangitis should be controlled. Frequently there is marked evidence of inflammation, but this is due to actual invasion by tumor and antibiotics are of no value.
3. Bad teeth can usually be pulled at the time of surgery, thus minimizing the number of operative procedures.
4. Tracheotomies need not be done preoperatively unless there is real respiratory obstruction. Postoperatively these can be done as the final step in the main operation.

POSTOPERATIVE CARE

During this period there are a few pertinent points as follows:

1. Patients should be ambulated early.
2. Special attention should be devoted to

keeping the air passages open. This is facilitated by:

- A. Deep breathing and coughing.
 - B. Maintenance of an adequate fluid intake to insure liquid tracheo-bronchial secretions which can be easily coughed up.
 - C. Minimum sedation to prevent any diminution of the cough reflex or of the depth of respiration.
 - D. Mechanical cleansing of the tracheo-bronchial tree with suction and catheter. This is particularly important in those patients who have tracheotomies. Bronchoscopy will rarely be necessary if the above measures are observed, but should be used when there is unexplained respiratory obstruction.
3. If there is any unexplained dyspnea, a chest plate should be obtained immediately to determine whether there is a pneumothorax. This may be simple or tension, unilateral or bilateral, and should be treated promptly by aspiration with a needle. If this is not completely effective, a catheter should be put in the pleural space through a trocar and connected to an underwater seal. The trocar is removed and the catheter left in until the lung is expanded. If the pneumothorax is bilateral, catheters may be put in both sides. Prompt diagnosis and treatment will save some patients who would be otherwise lost.

4. Hemoglobin values should be maintained by transfusions as required.

5. Some antibiotic should usually be employed for a few days.

6. Nutrition should be maintained. Patients may be fed through nasal tubes if they cannot swallow. No naso-gastric tube should be left in place longer than 3 or 4 days without being removed for 12 to 24 hours. Grave complications may ensue from a tube which is left in continuously over a few days. The smallest and softest tube available is the least likely to cause any pressure disturbances, and is the most comfortable for the patient. Gastrostomy may be necessary at times.

NECK AND JAW-NECK DISSECTIONS

A discussion of the terms used herein seems pertinent.

1. Suprahyoid neck dissection. This en-

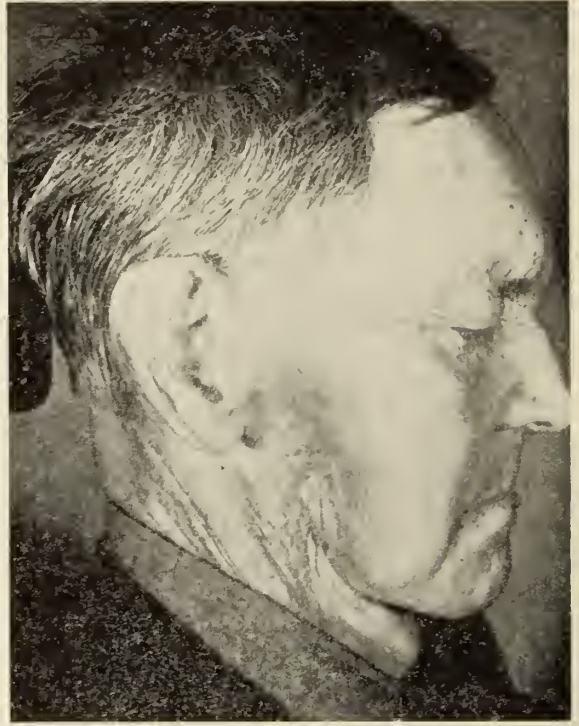
tails en bloc removal of the contents of the submaxillary triangle. Skin flaps should be cut superficial to the platysma muscle, and all structures, including the fat, fascia, lymphoid tissue, and submaxillary gland superficial to the deep muscles, removed. The hypoglossal and lingual nerves will be exposed and should be preserved. The lower pole of the parotid gland may be removed. The facial nerve may or may not be seen but should be assiduously avoided. Any nerve may require deliberate sacrifice if there is malignant tissue too close to it, but the same nerve should not be cut accidentally.

This dissection is often done bilaterally in continuity. Usually 4 to 6 lymph nodes are removed on a side by this procedure.

2. Supra-omohyoid neck dissection. This is slightly more extensive than a suprahyoid neck dissection, and in some clinics has almost completely replaced the former. It starts at the apex of a triangle formed where the omohyoid muscle appears from under the anterior border of the sternomastoid muscle, and goes up to remove all of the structures included in the lesser dissection. The internal jugular vein is saved, but the lymph nodes about it are dissected free. In this manner a total of 8 to 12 lymph nodes are usually removed from each side.

This operation can likewise be performed bilaterally at one time.

3. Radical neck dissection. This operation is the most extensive standard lymphadenectomy in surgery. It has stood the test of time, is satisfactory anatomically and pathologically, and is performed in substantially the same manner in most clinics. The limits are the clavicle inferiorly, the mandible superiorly, the trapezius posteriorly, and the midline anteriorly. The tissues usually removed are the sternomastoid and omohyoid muscles, the branches of the cervical plexus, the spinal accessory nerve, the external, internal, and frequently the anterior jugular veins, the submaxillary gland, the posterior belly of the digastricus, the stylohyoideus, the lower pole of the parotid, and all fat, fascia and lymphoid tissue down to the deep musculature of the neck. The common and internal carotid arteries, the components of the brachial plexus, and the phrenic, vagus, hypoglossal, and lingual



Figs. 2, 3, 4, 5. These four pictures show front and side views of a man who has had the ramus and most of the body of the mandible removed. The opposite mandible plus the anterior 2.0 cm. of the body remaining on the resected side give a normal contour of the chin. There is no attempt at replacement when the resection is done

for malignancy, but he can chew hard foods with the remaining hemi-mandible. Scars are not noticeable in the wrinkled skin of this patient.

(The photographs are by courtesy of Dr. J. J. Modlin, Ellis Fischel State Cancer Hospital, Columbia, Mo.)

nerves should be identified and spared. The facial nerve and the thoracic duct are not always identified but should be protected from injury by careful dissection in the areas where they are likely to be encountered. Radical neck dissections may be done bilaterally if staged. Thirty five to 100 lymph nodes will be removed on a side by this type of procedure.

4. Jaw-neck dissections. This term is used to refer to a neck dissection combined with removal of the entire hemi-mandible (i. e., the body and ramus of the mandible of one side) en bloc with the products of the neck dissection. It may be a supra-omohyoid jaw-neck dissection, or a radical jaw-neck dissection, for example. When only segments are removed it should be so specified as "right radical neck dissection with removal of the body of the right mandible, floor of mouth and anterior $\frac{2}{3}$'s of the tongue." Only by some common definition may any comparison of results be made.

EFFECT OF SACRIFICE OF CERTAIN STRUCTURES

Unilateral sacrifice of the following structures is manifested clinically as indicated:

1. Vagus nerve—Hoarseness due to paralysis of the hemilarynx.

2. Phrenic nerve—Unilateral diaphragmatic paralysis.

3. Ansa hypoglossi—No clinical effects.

4. Facial nerve—Unilateral facial palsy.

5. Hypoglossal nerve—Unilateral paralysis of the tongue.

6. Lingual nerve—Unilateral anesthesia and loss of taste of the anterior $\frac{2}{3}$'s of the tongue.

7. Brachial plexus—Paralysis of the portion of arm innervated.

8. Common carotid artery—Death in up to 30 per cent of patients. It is safer to ligate this artery than to ligate the internal carotid artery because if the carotid bulb is left intact when the common carotid artery is ligated there is collateral circulation between the external and the internal carotid arteries. When the internal carotid artery is ligated, or when the bulb with the common, internal, and external carotid arteries is ligated there is only intracranial collateral circulation. Frequently this does not prove sufficient; the patient develops hemi-

plegia or dies in a large percentage of cases.

9. Internal carotid artery—Death in up to 30 per cent of cases as described above.

10. Carotid bulb, with the common, internal and external carotid arteries—Death in up to 50 per cent of the cases.

11. External carotid artery—No clinical effects.

12. Ligation of the thoracic duct—No clinical effects. If the duct is injured, and drains externally, the patient will go down hill because of lost nutrients until it closes spontaneously or is closed.

13. Spinal accessory nerve—Some pain and loss of abduction of the arm.

14. Internal, external, anterior jugular veins—No clinical effects.

15. Injury to the pleura—This should be closed as it may lead to an extensive pneumothorax.

Bilateral sacrifice of these same structures is not as well determined but is as follows:

1. Vagus nerve—Probably death from cardiac failure, and complete laryngeal paralysis.

2. Phrenic nerve—Complete paralysis of the diaphragm, compatible with life.

3. Ansa hypoglossi—No clinical effects.

4. Facial nerve—Complete facial paralysis.

5. Hypoglossal nerve—Almost complete paralysis of the tongue so that speech is unintelligible, and the patient can swallow only with great difficulty if at all.

6. Lingual nerve—Complete anesthesia and loss of taste of the anterior $\frac{2}{3}$'s of the tongue.

7. Brachial plexus—Paralysis of both arms in areas innervated.

8. Common carotid artery—Death in most instances.

9. Internal carotid artery—Death in most instances.

10. Carotid bulb—Death in most instances.

11. External carotid artery—This may usually be ligated bilaterally without deleterious effects, and is a useful procedure in the treatment of certain tumors. It is wise

to do the ligation distal to the origin of the lingual artery on at least one side, because necrosis of the tip of the tongue may develop if the external carotid artery is ligated proximal to the origin of the lingual artery bilaterally.

12. Thoracic duct—While there is not usually a bilateral thoracic duct, no ill effects are noted from bilateral ligation of any lymph ducts which may be encountered.

13. Spinal accessory nerve—Bilateral pain in the shoulder, and limitation of abduction of the arm. While this is troublesome it is not too disabling, and patients are able to carry on heavy labor. Other functions of the arm are only slightly impaired due to inability to fix the scapula.

14. The anterior and external jugular veins can be ligated bilaterally without any clinical manifestations. The internal jugular vein can be ligated on both sides provided there is a period of a few weeks between operations. Even with this time interval between procedures, the patient develops marked edema of the structures above the ligation. He may have severe headaches for weeks, and there may be so much laryngeal edema that a tracheotomy is required for many days. When a bilateral radical neck dissection is necessary it may be preferable to preserve one internal jugular vein as this prevents most of the postoperative edema encountered when both of these veins are sacrificed.

15. Injury to the pleura—If this can be closed it should be done. When there is danger of an extensive pneumothorax, a small intercostal catheter connected to an underwater seal may be required.

TRACHEOTOMIES

Although this has already been mentioned, it is so important that another paragraph will be devoted to it. Whenever there is any indication that a tracheotomy will be required postoperatively, it is wise to do it at the termination of the initial procedure while the patient is still asleep and in the operating room. This is far more satisfactory than doing one on a semiconscious patient who is cyanotic, uncooperative, struggling, and gasping for air on a ward where light is poor, suction missing, relatives crying, and other patients are apprehensive. Elective tracheotomies should be done al-

most routinely following a jaw-neck dissection and any very extensive procedure. Routine radical neck dissections as a rule do not require tracheotomies. The tracheotomy may be done through a short transverse or vertical incision as desired, and the wound will heal with little scar as soon as the tracheotomy tube is removed. It is useful to remove a short segment of one tracheal ring (0.5 cm.) in length so that the tube may be replaced easily should it be pulled out.

To lose a patient because of an inadequate air supply is a terrible tragedy that can usually be prevented by careful assessment and timely intervention.

SPECIFIC LESIONS

TONGUE

The anterior $\frac{2}{3}$'s of the tongue is derived from ectoderm and the neoplasm most frequently affecting it is a well differentiated epidermoid carcinoma. Despite the fact that this tumor often shows marked pearl formation it metastasizes to the cervical lymph nodes in a high percentage of cases (60 to 80%). The high rate of lymphatic dissemination may be due to the milking effect of constant muscular activity. Although the tongue is very vascular, blood-borne metastases are relatively rare. Cure depends on the control of the primary lesion and the regional lymph node metastases. Whereas the primary tumor has been eradicated in up to 50 per cent of the cases in certain series by the use of radium, the overall 5-year cure rate in the same series is only about 20 per cent. To date the most accepted course of treatment has been irradiation of the primary lesion, followed by bilateral radical neck dissection for removal of the metastases. The results thus obtained have not been good, and wider application of surgery seems justified. Where possible the tumor should be removed en bloc with the lymphatics. In the treatment of cancer of the tongue the following regimen is probably the treatment of choice:

1. A radical neck dissection, combined with removal of the hemi-mandible, floor of the mouth, and involved portion of the tongue at one operation.

2. A second radical neck dissection 3 or 4 weeks later, with preservation of the internal jugular vein on this side.

This type of procedure has not been performed, documented, and followed sufficiently to provide any statistics but the results to date indicate that the long term results will certainly be no worse than by the use of irradiation and delayed neck dissection. They may be much better.

Provided the patient is left with a small bit of tongue, and this fragment is innervated by one lingual and one hypoglossal nerve, speech is understandable, and deglutition satisfactory.

FLOOR OF THE MOUTH

These cancers are usually epidermoid, frequently infiltrating, and metastasize to the upper cervical and submaxillary lymph nodes in a high percentage of cases (90% in some series). The submaxillary lymph nodes may be involved by direct extension. These tumors invade bone early because of their proximity to the mandible, and this complicates irradiation treatment. The overall cure rate for these cancers of the floor of the mouth is not too different from similar carcinomas occurring on the tongue. Most clinics report approximately 20 per cent, 5-year survivals when treated by irradiation and surgery. Because of the high rate of metastases and the early involvement of bone, the same general outline of treatment suitable for cancer of the tongue is satisfactory for these lesions. Since most of the metastases are higher in the neck in these carcinomas it is usually possible to perform the entire extirpation in one stage. For example, a lesion of the right side of the floor of the mouth may be treated by a right radical jaw-neck dissection with a left supra-omohyoid neck dissection all en bloc.

BUCCAL MUCOSA

These lesions are often extremely well differentiated, many being of the "verrucous carcinoma" type. Metastases depend to a large extent upon the degree of differentiation. The more mature tumors rarely spread beyond the local confines of the primary, but the less differentiated lesions go to the regional lymph nodes in a substantial proportion of cases. The cure rate for the local, well differentiated lesion should be very high, but the more malignant lesions are about as dangerous as cancer of the floor of the mouth. The overall five-year cure rate in some series is only about 30 per cent. The primary tumor may

be excised, and the defect closed or grafted immediately. Whether the regional lymph nodes are removed depends on the clinical evaluation. Generally, neck dissections will not be done unless there are clinically positive lymph nodes. Involved adjacent structures such as the mandible or maxilla should be removed with the main lesion en bloc. With early radical removal the prognosis is fairly good.

UPPER GINGIVA

Tumors originating in the antrum may invade the upper gingiva and be mistaken for a lesion primary in the gingiva. The prognosis of tumors of this type is very poor. The epidermoid cancers which originate on the upper gingiva are often well differentiated, and the rate of metastases to the regional cervical lymph nodes will depend to a great extent upon the morphology. Wide local removal of the primary focus, together with the underlying bone, is the treatment of choice. Here too the decision concerning the regional lymphatics will depend on clinical evaluation. Neck dissections are not done routinely. The prognosis of the mature lesions is excellent, but it decreases as the less differentiated lesions are encountered.

LOWER GINGIVA

These epidermoid cancers, like those of the upper gingiva and the buccal mucosa, are highly differentiated in many cases.

Nevertheless, there are enough poorly differentiated lesions to make the incidence of lymph node metastases rather high (65%) in some series. The mandible is invaded early because of the thin layer of connective tissue beneath the mucous membrane. This, plus the high rate of lymph node metastases, makes this lesion particularly suitable for surgical cure. A supra-omohyoid neck dissection with removal of the involved area of mandible en bloc is the preferred treatment. Prognosis with this type of therapy early in the course of the disease is good.

SUMMARY

1. Epidermoid carcinoma is the most frequent intra-oral malignancy.
2. Evaluation of the tumor must include the histology, the gross extent, and the exact location of the primary focus and the metastases.
3. Treatment must provide control of the

primary lesion and the regional lymph node metastases.

4. The fact that multiple epidermoid cancers are likely to occur in the same mouth diminishes the long term prognosis.

5. The scope of surgical treatment has broadened considerably in the past decade.

6. Good oral hygiene, eradication of precancerous lesions, early diagnosis, and initial, adequate, definitive treatment will result in a much higher cure rate than more heroic measures taken after long progression, and previous inadequate intervention.

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CANCER OF THE LIP

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Cancer of the lip is by far the most common of all forms of cancer of the oral cavity. In this position it comprises about 2 per cent of all cancers of the human body. Because of this frequency and because of the excellent results which may be obtained with intelligent management it is felt that both the medical profession and the lay public should be frequently reminded of this lesion.

Cancer of the lip is found predominantly in men, only about 2.5 per cent being found in women. This varies considerably in Sweden where most cases are found in women. This is believed to be due to an endemic dietary deficiency disease found most commonly in women and characterized by atrophy of the mucous membrane of the mouth. Cancer of the lip is extremely rare in Negroes.

Tobacco, and in particular the habit of pipe smoking, has been considered responsible for development of carcinoma of the lip in many cases. However, this argument, at best, offers only a small percentage of the predisposing factors since it is true that, among patients with carcinoma of the lip,

pipe smokers constitute a definite minority.

Leukoplakia is not uncommon in the lip. Schreiner found leukoplakia accompanying carcinoma of the lip in 2.6 per cent of his cases, while Hayes Martin found it is 28 per cent. The co-existence of syphilis with carcinoma of the lip is not as frequent as with carcinomas of the oral cavity. It has been variously reported between 3.6 and 10 per cent.

Longstanding exposure to sunshine, wind and frost is by far the most frequent cause of cancer of the lip. Chronic exposure to sunshine over a long period of time results in dryness and hyperkeratosis of the skin of the face and neck, as well as the exposed aspect of the lip. This hyperkeratosis gradually may develop into a superficial area of ulceration which later becomes indurated and is found to be carcinomatous. In general, blond-skinned individuals are more easily affected. There are many cases of carcinoma of the lip, however, who have never been exposed to prolonged effects of sunlight, wind or cold. It is generally felt also that in the outdoor group the lesions develop in older patients usually giving a history of

longstanding hyperkeratosis; while in the indoor group the lesions more often develop from normal lip or from leukoplakia in younger individuals frequently giving a history of syphilis. Almost any age may be affected, but about 65 per cent of the cases are seen between 50 and 65 years of age.

Microscopic Pathology

The overwhelming majority of malignant tumors of the lip are squamous cell carcinomas. In general, they present a moderate degree of differentiation. In one group of reported cases, 66 per cent were grade I squamous cell carcinomas, 20 per cent were grade II, 2 per cent were grade III, and the rest were ungraded. Basal cell carcinomas do not arise on the mucous membrane or vermilion part of the lip. However, these lesions, having arisen on the skin of the lower lip, may invade this area secondarily. Such cases should be considered as epitheliomas of the skin rather than of the lip itself.

Clinical Appearance

These neoplasms appear to be well defined, elevated and usually ulcerated lesions with indurated margins; some are deeply ulcerated and inflamed, whereas others are large fungating masses. Occasionally, a slow growing, extremely highly differentiated grade I squamous cell carcinoma presents itself as an area of extreme hyperkeratosis in which there is formed a cutaneous horn. Great variation in size is seen in these lesions, depending on the duration of the growth and the degree of activity. If left untreated, they may infiltrate the lip, the cheek, or the chin, and become attached to the periosteum of the underlying bone or invade the substance of the mandible itself. Clinically, however, little difficulty is encountered in the diagnosis of carcinomas on the lip, although some of them, particularly the more active types, cannot always be distinguished from inflammatory tuberculous or syphilitic lesions. Many carcinomas of the lower lip develop from what the patient calls a blister. In many others there is a history of scaly areas of hyperkeratosis which finally leave a superficial bleeding ulceration. This process may last many years, and this explains some of the unusually long histories in carcinomas of the lip. In other instances, the carcinoma develops in an area of known leukoplakia.

It is seldom that a carcinoma develops from an entirely normal lower lip. Since the development of a carcinoma of the lower lip is rather slow, it produces no symptoms until it has reached a rather advanced stage. Therefore, it is not infrequent that these lesions are ignored for years before medical advice is sought.

Because mere visual inspection of growths on the lips does not lead to a definite diagnosis regardless of the clinical appearance, it is absolutely necessary that a diagnosis be completely established by pathology examination of a biopsy specimen before any coordinated or intelligent plan of treatment can be laid down for any given patient. Because of the high rate of cures which are obtainable in these lesions, we make it a rule in our practice to remove a specimen for histological examination in any case where there has existed an ulcerated lesion of the lip which does not heal in 3 to 6 weeks. Such a policy leads to the diagnosis and early treatment of many malignant tumors which otherwise would be neglected until they have reached a much more advanced stage.

Differential Diagnosis

From a clinical standpoint, differential diagnosis lies between simple herpes, longstanding hemangiomas with ulceration, vitamin B deficiency with lesions in the buccal commissure, syphilis, hyperkeratosis and leukoplakia. Of all of these, however, the main challenge in differential diagnosis lies between hyperkeratosis and leukoplakia. Both of these are known to precede carcinomas of the lip in a large number of cases. Repeated observation may be necessary before a definite diagnosis is established. This is true from a histological standpoint as well as clinically.

Metastatic Spread

The occurrence of lymph node involvement is variable in carcinomas of the lip. In some large series reported, as many as 20 per cent of the patients present themselves for treatment after metastases have already developed. If the primary lesion has been controlled, however, a relatively small percentage of patients will ever develop a metastasis. In a series of 223 patients with carcinoma of the lip without apparent metastases reported by Dr. Martin,

only 27 (12%) developed metastases after treatment of the primary lesions. The most commonly invaded nodes are those of the submaxillary region on the same side as the lesion. The middle third of the lip may metastasize to the submental nodes. Involvement of the deep cervical nodes is found in about 12 per cent of the cases with submaxillary metastasis, but seldom occurs in the absence of submaxillary metastasis.

Metastasis to the opposite side of the neck is rarely seen unless the lesion has invaded near or beyond the midline. The chance of the metastasis increases, the less differentiated the carcinoma. Taylor and Nathanson reported only a 6 per cent incidence of metastasis in grade I carcinomas of the lip. This rose to 30 per cent in grade II, and to 52 per cent in grade III.

It should be recognized that the presence of a palpable lymph node in the submaxillary region is not always evidence of metastatic disease. According to Taylor and Nathanson, any lymph node which becomes larger than 2 cm. in diameter may be considered fairly accurately from a clinical standpoint to indicate metastasis in these cases. However, it is our criterion to consider any enlarged submaxillary node as metastatic in these cases until proven otherwise.

Control of Precancerous Lesions

It is reasonable to assume that the removal of lesions which are nonmalignant but which are likely to lead to the development of actual carcinoma will contribute greatly to the control of malignant lesions of the lip. Consequently, we recommend that all lips showing thickened patches of leukoplakia, chronic scaling, keratosis, persistent inflammatory ulcers or recurrent fissures receive treatment. Surgical removal and microscopic study appear the treatment of choice in these lesions rather than irradiation. It is interesting to note again that for unknown reasons precancerous lesions are extremely rare on the upper lip. Consequently, there are relatively few such lesions which need surgical treatment on the upper lip.

Treatment

No malignant growth of the body is more accessible to treatment than carcinoma of the lip. The primary lesion must be treated directly and completely. It is generally ad-

mitted that skillful surgical excision, x-ray therapy, or radium therapy contributes a high percentage of local cures in carcinoma of the lip. While this is readily admitted, there is still a definite controversy as to whether surgery or radiotherapy offers a better method of treatment. These differences of opinion are possibly not explained too much on the basis of various surgical techniques but rather on the basis of a very unequal variety of radiotherapeutic skills and experiences. I would like to say right here that it is my firm belief that any of these patients who might be selected for treatment by x-ray or radium should undoubtedly be treated by a well trained radiologist. At the present time there are many people who are making a stab at x-ray treatment of carcinomas here and there over the body who actually have never had any training whatsoever along this line except for a short period of instruction from the x-ray salesman or a two weeks' course of instruction in x-ray therapy given by someone who does more harm than good by giving the course. We have seen patients who have obviously been treated either by inadequate doses of irradiation or by dosages which were given without any regard whatsoever and probably without any knowledge of how to compute or administer the properly planned dosage of irradiation for a given patient. I would also like to emphasize that every patient, if intelligently treated, must have a microscopic diagnosis whether he be treated by the surgeon or the radiologist. At the present time excellent microscopic diagnosticians are available to every doctor regardless of the location in which he happens to practice. Because of this, there is actually no excuse for treating even one of these cases without doing a biopsy and establishing a definite diagnosis.

In general, we believe that wide surgical excision of the primary lesion is the treatment of choice, having two distinct advantages. First, the local lesion is rapidly removed, in most instances, and immediate plastic closure of the resultant defect is possible, thus permitting prompt reconstruction of the lip with a satisfactory cosmetic result. Second, and of more importance than the first, is the fact that surgical removal of the local lesion permits a detailed histologic examination of the entire

growth. In removal of epitheliomas which do not involve more than one third of the lower lip, a v-shaped incision is used. After excision of the lesion, the margins of the defect are sutured together in three layers, using fine twisted nylon sutures in most cases. When properly executed, this operation leaves an excellent cosmetic result since the relatively small amount of tissue removed does not change appreciably the width of the mouth.

Large epitheliomas which require a v-shaped excision of more than a third of the lip require more extensive plastic correction. Although the margins of the large v-shaped defect are sutured together as just described, a greatly narrowed lip and orifice result. The width, therefore, must be increased by a plastic operation on the upper lip and cheek at both angles of the mouth. This is a very old surgical procedure, having been described by Bernard in 1853. Another form of lip reconstruction was introduced by Estlander in 1865. This consists of repairing the defect of a v-shaped excision of the lip by a flap of the same shape taken from the opposite lip, rotated to form a new buccal commissure and maintaining at the same time the circulation through the coronary artery of the lip. In the treatment of lesions involving the commissure, irradiation is definitely contraindicated. In these lesions, wide surgical excision, often extending well onto the cheek, must be resorted to. Repair of these defects is usually done by shifting a pedicle graft from adjacent areas.

To summarize, we believe that surgical treatment is the treatment of choice in carcinoma of the lip in the following types of cases: (1) In a small lesion with a large mouth, local excision gives enough assurance of control and satisfactory cosmetic result and is in addition more rapid. (2) With very extensive lesions a good cosmetic result may not be possible with x-ray therapy because of the resulting defect. This may require a plastic repair by the means of a tube flap or pedicle graft. In such instances surgical treatment might very well be more satisfactory from the start. (3) With small or moderately large lesions which have already metastasized, the surgical management of the primary lesion will allow immediate care of the metastatic

lymph nodes. (4) When there has been previous inadequate x-ray therapy with marked changes in the surrounding areas, further x-ray therapy may be contraindicated and surgical treatment is preferable. (5) When radiotherapeutic skill is not available, a surgical procedure is obviously the treatment of choice.

Treatment of Metastatic Lymph Nodes

Any definite lymph node enlargement in the neck should be considered to be a metastasis until proven otherwise. Any patient exhibiting such a node should at least have a supra-omohyoid dissection and preferably a complete or so-called radical neck dissection. When bilateral metastases are present, a bilateral supra-hyoid dissection, combined with a complete dissection on one side, may be done. The lower portion of the dissection on the opposite side may be done after 2 to 4 weeks. We have done several cases of this type with bilateral division and removal of both internal and external jugular veins without untoward effect.

The excision of parts of the invaded mandible in the same block with the neck contents often brings about a permanent cure.

In a few cases, because of various contraindications, neck dissection is out of the question. In these cases, interstitial irradiation by implantation of radium needles or radon seeds with carefully computed dosages, or thorough external irradiation, remain the only possible treatments.

Prophylactic Neck Dissection

We do not do routine or prophylactic neck dissections on a patient with cancer of the lip for two reasons. First, neck dissections adequately done after the appearance of enlarged lymph nodes give a very high rate of cure. Second, a careful statistical analysis of over 400 cases at the Ellis Fischel Cancer Hospital and Memorial Hospital reveals that as high as 15 unnecessary such operations are done for every one of possible benefit.

Prognosis

The prognosis of carcinoma of the lip is excellent. In patients who never showed evidence of metastases, there was no evidence of any recurrence in between 90 and 94 per cent of the large series of patients reported by Eckert and by Schreiner and

Martin. Dr. Figi reported an 80 per cent five-year survival in a total number of 270 patients who had not received previous treatment. The percentage of five-year cures in previously treated patients was only 68 per cent. The chances of a five-year cure in patients presenting themselves with metastases at the time of admission varies in different reports from 24 to 52 per cent in the case of unilateral metastasis and 20 per cent in the group of bilateral metastases reported by Taylor and Nathanson.

SUMMARY

1. Cancer of the lip is a frequent disease with a high rate of cure.

2. Longstanding exposure to sunshine and wind, hyperkeratoses and leukoplakia are the most common predisposing factors.

3. Clinical diagnosis should always be supported by microscopic diagnosis.

4. Metastasis to the regional lymph nodes should be treated by complete neck dissection.

5. So-called prophylactic neck dissections should not be done except in unusual instances of suspected poor follow-up.

6. Prognosis is excellent for cure of the primary lesion and fairly good for cure of lymph node metastasis.

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Private Practice-Health Department Relationships—Let us ask certain questions of the health officers, first. These questions will be embarrassing to some of them.

1. In planning the department's program, have you given major emphasis to the "Basic Six"? (Vital statistics, communicable disease control, maternal and child health, environmental sanitation, health education, and public health laboratory facilities.)

2. Have you allowed yourself to be sold on various special programs to the detriment of any basic services?

3. Have you worked diligently for adequate staff and physical facilities?

4. Have you devoted yourself to the job of educating, advising and guiding the various voluntary health agencies of your community to the end that their resources are more logically and more effectively utilized?

5. Do you and your staff recognize your responsibility to give every assistance to the private (family) physician who is "the man up front" in the battle to protect the public's health?

6. Do you and your staff realize that public confidence, respect and esteem are not your right by virtue of position but must be purchased with competent service and devotion to the common good—often "above and beyond the call of duty"?

And now, in turn, the private practice of medicine should provide more acceptable answers to the following questions:

1. Have you interested yourself in your health department (its personnel, its facilities and its services) and have you actively cooperated with it in the control of communicable disease?

2. Do you actively support your health officer in his efforts to obtain better personnel, modern facilities, more adequate budgets, or are you passive and inactive in such matters?

3. Is your health officer an ex-officio member of your society's board of managers? If he is capable, he will welcome your advice; if he is incompetent, he needs your help.

4. Is the medical citizenship at local level consistent with state and national policy? Remember that "high-sounding phrases" not supported by appropriate action are interpreted as duplicity by the public.

5. Do you actively participate in the work of the voluntary health agencies—attending regularly, serving on advisory boards, aiding and guiding them to more logical programs? Remember that confidence and good will for yourself and the profession can be built only in this way.

6. Do you actively participate in all efforts to establish community health councils, or their equivalent, which are designed to evaluate health programs and promote efficiency and eliminate waste in this field? It is difficult to understand why this activity has had so little effect at local level.—*Russell, California Med.*, March 1951.

CARCINOMA OF THE VULVA

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Carcinoma of the vulva occurs in about 3 to 4 per cent of all cases of malignancy of the female genital tract. Its occurrence is usually preceded by some benign condition of the vulva that may exist over a number of years. Thus, to a certain extent, it may be called preventable. In most cases a predisposing history of leukoplakia can be obtained. Other cases show previous lesions of syphilis, condyloma, or chronic irritation. With this in mind, all lesions of the vulval region should be closely observed and adequate treatment instituted early in an effort to prevent the occurrence of carcinoma. It is not within the scope of this paper to enter into a discussion of the treatment of these premalignant lesions.

Most cases of carcinoma of the vulva are epithelial in origin. However, we do see a few adenocarcinomas developing in Bartholin glands and sweat glands. Also malignant melanomas have been noted occurring in pigmented moles on the vulva. There have been many efforts at classification and grading of tumors of the vulva but we do not believe that they are too accurate or of much clinical assistance. Many tumors have been thought to be confined to the vulva because no palpable nodes were noted in the inguinal region. Bitter experience has shown that this is not true and that failure to suspect gland metastasis because no nodes are palpable will prove disastrous in many cases.

Most cases of carcinoma of the vulva occur in the older age groups. Taussig reports an average age of about 60 years. In the older age groups one is confronted with poorer operative risk patients because of the prevalence of many degenerative diseases that we would naturally expect to occur at this period of life. However, even with this in mind, an operability rate of about two-thirds of the cases exists. Nevertheless, because of age and general physical condition, procedures must sometimes be incomplete.

The treatment of choice has evolved through the years. This would consist of a radical vulvectomy combined with inguinal

gland dissection. The use of x-ray has no place in the treatment of carcinoma of the vulva. Even when x-ray is used as palliation it leads to a drying and cracking of the adjacent skin, and because it has no curative value its use usually leaves the patient so uncomfortable that it is valueless. Because of age and debility a simple vulvectomy is sometimes all that can be done for some patients. Even in far advanced lesions where a hope for a cure is out of the question, a simple vulvectomy will rid the patient of the foul smelling ulcerative mass and certainly make her more comfortable. Whenever possible a deep vulvectomy should be combined with an inguinal gland dissection. Here again we would like to reiterate that just because no nodes are palpable in the inguinal region does not mean that metastasis has not occurred. Therefore, in my opinion, almost every case of carcinoma of the vulva, not contraindicated for medical reasons, should have a gland resection. It should be pointed out that this gland resection should be bilateral, and not just confined to the side of the lesion, since it has been shown that contralateral spread to the opposite inguinal region occurs.

Following diagnosis by biopsy, these patients are prepared for surgery as soon as possible. A complete wide vulvectomy, including the clitoris and extending as far lateral as necessary to include adequate tissue around the lesion, is carried out. The use of vaginal flaps made by undermining the mucosa is used frequently for closure. We do not worry if the skin cannot be brought together by primary union because it will granulate surprisingly well, and if not the use of pinch grafts from the thigh is a simple matter. In other words, wide excision of the tumor-bearing area without regard for tissue conservation is recommended.

Cotton suture material is used for ligatures and to close the subcutaneous dead space, with chromic 00 or 000 for closure of the skin. An indwelling catheter is left in the bladder for two to three days postopera-

tive, and a heat cradle is placed over the lower abdomen with perineal light. Sulfa drug powder is sprinkled over the external vulva. After 24 hours the patient is urged to ambulate but this is not mandatory in all cases. Following a period of ten days to two weeks the second stage is then carried out, consisting of a bilateral inguinal node resection in one stage if possible. This all depends on the general condition of the patient. The superficial nodes, with the accompanying fat and areola tissue, are dissected out en masse. Poupart's ligament is then cut and the inguinal canal cleaned out; and the dissection is carried down into the femoral canal, with the removal of the node of Cloquet if this can be identified. The floor of the inguinal canal is opened and the epigastric vessels ligated. Dissection is then carried down along the iliac vessels into the obturator foramen. I feel like it is probably useless to go any higher along the iliac chain unless dealing with a particularly young individual and suspicious nodes have been encountered. Moreover, we are not sure that further dissection is beneficial if the cancer has already extended that high. Here again cotton sutures are used, and cotton waste is applied over the wound as a pressure dressing. A drain is inserted. In spite of all attempts to use pressure and drainage a large percentage of these wounds always slough. After surgery the patients are ambulated as soon as possible. The use of Ace bandages is recommended in the older age groups. Because many of these patients die postoperatively from pulmonary embolism the use of anticoagulant therapy probably has a place in their management but in this series it was not used.

Following the complete operation, consisting of a radical vulvectomy with gland dissection, one may expect an overall cure rate of around 55 to 60 per cent. Incomplete surgery because of age or debility, and consisting of only a simple vulvectomy, would cut this cure rate in half. On the other hand small localized lesions without inguinal spread would give close to a hundred per cent five-year survival. The presence of positive nodes in the resected inguinal glands would certainly lower the percentage of curability. Taussig found 46 per cent positive nodes in his operative cases, with a lowering of his curability about 10 per

cent. A primary surgical mortality of about 10 per cent is to be expected.

CASE REPORTS

1. Mrs. J. A. R., age 86. First seen in the Tumor Clinic October 15, 1948, complaining of a small, hard, indurated mass on the upper outer aspect of the left labia minora. Patient stated that the mass had slowly increased in size over a three-month period and that in the past two weeks it had doubled in size and had begun to bleed and become ulcerative. *Examination* revealed an ulcerative mass about 4 cm. in diameter, very tender, hard and ulcerating. Biopsy taken and reported as epidermoid carcinoma of the labia. General physical examination revealed a blood pressure of 205/100, and a heart slightly enlarged, with a few ectopic beats. *Past History*: Bilateral oophorectomy 45 years ago, cerebral accident 8 years ago, with residual paralysis of the right lower extremity (partial). A deep vulvectomy was carried out on October 28, 1948 under local anesthesia supplemented with ethylene. She stood the procedure well and was ambulated in 48 hours. The vulva healed by primary union and the patient was discharged in ten days. Because of her age and debility a gland dissection was not recommended in this case. No palpable nodes were felt at the time of the initial surgery. She has been followed on numerous occasions since her operation and is living and well and free of recurrence two and a half years later.

Case 2: Miss M. M., white female, age 65, was first seen by a physician in June 1949 with a large ulcerating mass on the outer aspect of the right labia majora. The physician put her in a hospital and did a local resection of the mass, and then referred her to the Tumor Clinic for further treatment. Biopsy report of epidermoid carcinoma grade II was made. When first seen in the Tumor Clinic a local recurrence was noted in the margin of the previous excision a month previous. Biopsy revealed a recurrence of the carcinoma in the wound. A deep vulvectomy was carried out on this patient, followed in two weeks by a bilateral superficial and deep inguinal gland dissection. The deep node dissection was carried up to the obturator foramen. Pathological report revealed positive nodes in

the right superficial inguinal nodes. The left superficial and all deep nodes were negative. She received primary healing of the vulval wound but a large slough developed in both inguinal regions. This gradually filled in and epithelized without requiring grafting. This patient has been followed on numerous occasions with no evidence of recurrence over a period of 20 months.

Case 3: Mrs. L. K. B., white female, age 67. This patient stated that she had noticed a small nodule around the urinary meatus for about three years. In the past three months it had begun to ulcerate and was causing pain on urination. She was referred to a physician in Montgomery where she received deep x-ray treatment for a total of six treatments. She became so uncomfortable following these treatments that she returned home and was referred to the Tumor Clinic in Mobile. Examination revealed a large ulcerating crater arising around the urethral meatus and involving the clitoris, which was partially destroyed. The lesion extended around the urethra and upward about 2 cm. of its outermost portion. Cystoscopy failed to reveal any spread into the bladder or lumen of the urethra. A deep vulvectomy was carried out, with resection of the outer two-thirds of the urethra in July of 1949. The operation was done under saddle block anesthesia. She stood the procedure well. Pathological report was epidermoid carcinoma grade III. Ten days later a bilateral inguinal node dissection was carried out, with report of negative glands. A moderate slough of the inguinal incisions developed but healed by secondary intention. This patient has been well and free of the disease for 20 months.

Case 4: Mrs. W. P. L., white female, age 64. This patient was first seen in the office September 1949 with the complaint that she had been bothered with an itching around her privates for several months; and then about two weeks before being seen she noticed the appearance of a small painful nodule that began to bleed. Examination revealed a small tumor mass about 3 cm. in diameter, very firm and bleeding, on the outer aspect of the right labia majora. Biopsy was made and reported as epidermoid carcinoma grade I. A deep vulvectomy was carried out under saddle block anesthesia and the patient stood the procedure well.

Ten days later a bilateral one-stage inguinal node dissection was done under sodium pentothal anesthesia. The resected inguinal nodes were free of metastatic spread. The patient received primary healing of her vulval wound, with the development of a slough in the inguinal incisions that closed by secondary intention without grafting.

These four cases are presented merely as case reports to indicate some of the activity in our State Cancer Program that we are carrying out in Mobile. They have not been followed long enough to give any definite prognosis of cure but to date the follow-ups have been encouraging, and we believe that they all have a very good chance for five-year survival.

We realize that a small series such as this is of no statistical importance and from it one cannot draw any hard and fast decisions but, in conclusion, we would like to make the following remarks:

1. Carcinoma of the vulva is a disease of the older age groups.
2. Two-thirds of all cases are probably operable when first seen.
3. The procedure of choice in the treatment of carcinoma of the vulva is vulvectomy with inguinal node dissection.
4. A ten per cent operative mortality may be expected.
5. Using the radical operative procedure as outlined above, a survival rate of 55 to 60 per cent may be expected.
6. X-ray therapy has no place in the treatment of carcinoma of the vulva.

SUMMARY

Four cases of carcinoma of the vulva done in the Mobile Tumor Clinic and private practice have been presented. A discussion of the general management and treatment of carcinoma of the vulva has been given.

1059 Dauphin St.

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PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

J. W., age 5 years, was doing well until about two weeks before admission to the Clinic when he fell and injured his back. He was able to walk but could not lie flat in bed. Examination one week before admission revealed tenderness to deep palpation over the right lumbar area anterior and posterior. PA and lateral x-rays of the spine were negative.

The day of admission he had the same symptoms but aggravated and had been unable to walk for the past three days. A spinal puncture at this time revealed three cells and a positive (4+) Pandy. He was found to have muscle weakness in the anterior tibialis group, quadriceps and hamstrings. The abdominal muscles were very weak and the abdomen below the umbilicus was rigid. The abdominal, cremasteric and leg reflexes were absent. A diagnosis of poliomyelitis was made at this time.

The bladder was continuously distended and he dribbled urine constantly. He was given Kenny packs, hot baths and physiotherapy for one month and was discharged greatly improved.

Nine days later he was readmitted to the hospital with a history of having had a cold and cough for three days and fever for two days. There was nothing new to be found on physical examination but an x-ray of the chest at this time revealed: "There is a density around the left hilus consistent with pneumonia." The blood picture was as follows:

Hemoglobin 12.0 Gm.
Red blood count 4,010,000
White blood count 8,550
Polys. 62%
Lymphocytes 36%
Eosinophils 1%
Basophils 1%

He was treated with aureomycin, penicillin and sulfadiazine with no effect on the fever. Physical examination still revealed no adequate cause for the fever. Intravenous pyelograms, cystograms and repeated urinalyses revealed no abnormality. Three transfusions were given, partly empiric and partly to overcome slight anemia, with no

effect on the fever. About ten days after admission a mass was felt in the right lower quadrant of the abdomen which was movable but there was no tenderness. He had had no leucocytosis at any time. A laparotomy was done by Dr. J. O. Morgan, and a retroperitoneal tumor was found and removed, along with the distal ileum and ascending colon. There were many smaller tumors in the retroperitoneal space extending up to the diaphragm.

Dr. J. D. Bush's pathological report was as follows:

Gross Description

A mass of small intestine, cecum and appendix and grey-white tumor mass measures 25x25x20 cm. The tumor masses measure from 5 to 15 cm. in diameter. They are nodular, firm and grey-white, occupying the portion usually occupied by the mesenteric lymph nodes. The surfaces made by cutting bulge, are glistening, and are uniformly grey-white. The terminal portion of the ileum shows marked thickening of the intestinal wall and an infiltration by grey-white tumor tissue. One point in the intestine has a ragged perforation which measures 3 cm. in diameter. The proximal one-third of the appendix is thickened and infiltrated with similar tumor tissue.

Microscopical Description

Sections of lymph nodes show complete loss of structure. The entire node is filled with neoplastic cells. The individual cells are rounded, somewhat polyhedral with dark staining nuclei, and a scanty or almost completely absent cytoplasm. Sometimes it appears that the cells are made up altogether of naked nuclei. There are sometimes eight to ten mitotic figures per high power field. No multinucleated cells can be seen. Sections of the small intestine show a complete loss of normal architecture. The lining of the intestine shows a layer of neutrophils and fibrin. Throughout the entire thickness of the wall there is an infiltration of neoplastic cells like those seen in the lymph node. There is an increase in the fibrous stroma. The cells have infiltrated through the walls. No multinucleated cells can be seen.

Microscopical Diagnosis

Mesentery lymph node

Malignant lymphoma, lymphosarcoma type.

Small intestine

Malignant lymphoma, lymphosarcoma type, grade III to IV.

He was discharged about ten days after operation.

The shadow in the left hilum of the lung which looked like pneumonia was probably a metastasis as it did not clear up with treatment.

The fever was caused by the sarcoma and should always be considered in the differential diagnosis of unexplained fever in children.

Writing—Good medical writing adds to the stature of the general practitioner. It makes him a more careful and observing physician. Reducing results to writing, that one can expect to have checked and commented upon, makes for better and more orderly thinking and more careful evaluation of claims. Observation over a period of months and years will reduce the "placebo effect" and help to discover spontaneous remissions among one's cases. One's colleagues respect good work and one's specialist friends will accept the general practitioner's results when they find that he is careful, accurate and temperate in his claims.

Writing and teaching by general practitioners increase the respect accorded them by medical students, and makes it easier for them to interest students in general practice.

Finally may I urge that the general practitioner keep records and write about his results because we general practitioners are now doing the same type of diagnostic and therapeutic medicine that was regarded as the exclusive province of the specialist of 25 years ago. Now that it is recognized that we do good medicine, it again becomes our obligation to write, reducing the results of months and years of family practice and thousands of details of our patients' lives to the printed page for our colleagues, and for the younger men who will follow us.—*Miller, South. M. J., March 1951.*

Behavior Problems In Pediatrics—What's to be done about the crying of infants? Aside from the usual measures of sedative drugs, changing formulas and the like, there are several possible answers. First of all, it seems to me important that the concept be grasped that crying in the infant in the first few months of life is a protective reflex designed by nature as an effective method of calling attention to his needs at a time when he lacks other means of making his wants known. It must be looked upon as a wise provision on the part of nature, for without it it is doubtful if the human race would have survived.

As the infant matures and the need for this protective mechanism subsides, the crying reflex gradually disappears. The stimulus which calls forth the cry in the young infant may be minor and inconsequential or it may be of more major significance, such as hunger. At any rate, parents should be prewarned while the baby is still in the hospital that this is characteristic behavior of most infants in the first two or three months of life. Thus armed, they may be able to view with less concern and with more understanding the 3:00 a. m. whoops which are very likely to occur.

Helpful in the crying situation is the self-regulating feeding schedule which has become popular in recent years and which seems to me to be far more sensible than the previous rigid calorie and clock regimen. I have used it for a number of years now, and very seldom have I found a mother who doesn't prefer the privilege of feeling free to feed her hungry infant at the time the signs are obviously present rather than letting the clock be the deciding factor. It's illogical to suppose that a dozen infants all weighing 7½ pounds as they leave the hospital are going to have identical food needs or that their hunger contractions are going to come at identical hours. Infants whose growth genes have set a pattern for a rapid growth and large size will obviously demand more food than those of a more placid disposition. Every pediatrician has classic examples of unusual infant behavior in his experience with the self-regulating schedule. I have a couple. One was a two-month-old breast fed infant who put herself on three meals a day, took eight ounces at each feeding, gained beautifully and was a model of behavior. Another infant of three months of age cried incessantly. Bottle feedings were limited to six ounces, but were always completely consumed. The formula preparation was satisfactory. I suggested the mother let the infant have what it wished at each feeding. At the next visit a month later, I asked what had happened. The mother said the baby took two and one-half bottles or 20 oz. at the first feeding, then settled down to eight-ounce feedings and had been perfectly content from then on.—*Hill, J. Mich. M. Soc., February 1951.*

SOCIAL EVENTS

ANNUAL SESSION, MOBILE

Buffet Luncheon, Country Club, Thursday evening, April 19, at 6:30 o'clock.

Dance, Admiral Semmes Hotel, Friday night, April 20, at 9:00 o'clock.

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TUMOR REGISTRY

Physicians in Alabama have in the past reported with considerable regularity cancer deaths but have failed for the most part to report cancer when it is first diagnosed by the pathologist. In order to facilitate the reporting of all histologically diagnosed cancer in Alabama, the American Cancer Society has made a 5-year grant to the Alabama Association of Pathologists. Through the cooperation of the State and the Jefferson County Health Departments, a Tumor Registry has been set up in the Public Health Building in Birmingham. Each pathologist in Alabama is turning in to this Registry a copy of his pathologic report and, when practicable, a slide from the tumor. Secretarial assistance provided by the Cancer Society grant is making possible the completion and coding of these reports. Assistance in the coding is being furnished by the State and local Health Departments, and it should be possible at the end of a 5-year period for individual physicians, hospitals, and clinics to learn the outcome of treatment in their series of cases and for each pathologist to check his own accuracy in the grading of tumors. The data on punch cards will enable State and County Health Departments to have for the first time adequate morbidity as well as mortality statistics on cancer. Reports obtained at the end of the second year of the operation of the Registry indicate that the incidence of cancer in Alabama is greatly in excess of that hitherto suspected. All records on patients are being kept confidential, and the patients will not be directly solicited, nor can information on a given patient be obtained except from the pathologist who made the original diagnosis or from his referring physician.

DETECTING INTESTINAL CANCER

A combination of x-ray and visual examination has proved to be one of the most reliable ways for doctors to detect many cases of intestinal cancer in the early stages, a Mayo Clinic physician writes in a recent issue of The American Journal of Roentgenology and Radium Therapy.

Dr. Harry M. Weber of Rochester, Minnesota, says the diagnosis of early intestinal cancer is especially puzzling because "the

smaller and more circumscribed a lesion is, the less is its ability to cause clinical symptoms and signs."

Doctor Weber said he did not believe that examinations on a mass survey basis hold the key to early detection of intestinal cancer.

"These examinations," he said, "are too cumbersome and involved to be readily adapted to mass survey. Trained personnel is not available in nearly sufficient number to perform so many examinations, and the incidence of intestinal cancer is too low to make an undertaking of such magnitude economically feasible. Many of these examinations must be done on suspicion."

He said that persons who suffer from a chronic loss of blood, notice changes in the functional activity of the intestines, or have abdominal pain of a colicky, crampy type "should certainly undergo a most thorough intestinal investigation."

"The patient with early or even late intestinal cancer," he wrote, "may exhibit one, several, all or—of equal importance—none of these symptoms and signs, or others referable directly or even indirectly to the intestinal tract. Of the symptoms and signs enumerated, only the appearance of blood and possibly the cramping, colicky pain can logically be considered as manifestations of early cancer. The tumor which is responsible for the other symptoms and signs enumerated will practically always prove to be a larger and a more advanced growth. The patient who disclaims intestinal difficulty, or minimizes the difficulty he may have been influenced to admit, probably deserves at least as much consideration as the one who is remarkably apprehensive about his intestinal activity or about his lack of it."

Doctor Weber urged physicians "to keep the problem of intestinal cancer in all of its aspects well in the foreground of consciousness, and hesitate not at all to advise complete intestinal investigation even on remote suspicion."

He said that since intestinal cancer, apparently more than any other form of internal cancer, yields to modern treatment with a low mortality rate, and an encouraging survival rate if the disease is recognized in the early stages, "we can well afford to display enthusiasm about the problem of intestinal cancer."

CHECKING LUNG CANCER

With the number of reported cases of cancer of the lung increasing at a startling rate during the last few years, the x-ray journal, *Radiology*, has asked radiologists throughout the country to give more study to the disease.

The January issue of the journal said editorially that many statistical studies have been made to show that chronic smoking may be an important factor in the cause of cancer of the lung.

The journal said one study was made by Drs. Ernest L. Wynder of Georgetown Hospital, Washington, D. C., and Evarts A. Graham of St. Louis, who developed the operation known as total pneumonectomy or removal of a whole lung. The study consisted of 684 cases of proved lung cancer. In 605 of these (in men) they found that over 50 per cent of the patients were excessive or chain smokers compared to 19 per cent of the general hospital group without cancer. Only two per cent of the lesions occurred in non-smokers or minimal smokers. In 96 per cent of the cancer series there was a history of smoking for over 20 years, "which may account for the greater incidence of the disease in men, as excessive smoking by women is of relatively recent development."

Doctors Wynder and Graham believe, according to the editorial, that there may be a lag period of 10 years or more before the development of the cancer.

The editorial said also that the practice of inhalation among cigarette smokers may be significant from a medical standpoint.

The journal also referred to three other investigators who found that cancer of the lung occurs more than twice as frequently among those who have smoked cigarettes for 25 years than among non-smokers of comparable age.

"The offending agent is not indicated from any of these studies, as distillates from tobacco have never been proved to be carcinogenic," the editorial said, adding that there is a possibility that some other agent, such as spray material on tobacco plants, may be responsible.

"The foregoing observations," the article said, "offer statistical evidence that there may be more than a casual relationship be-

tween long-continued heavy smoking, especially of cigarettes, and the occurrence of lung cancer. The x-ray specialist is in a position to contribute further to the clarification of the situation. To this end, he should conduct his own investigations on all lung cancers coming under his care, reporting his findings to a central agency so that eventually the truth about this important problem may be known."

AMERICAN MEDICAL EDUCATION FOUNDATION

The recent action of the Board of Trustees of the American Medical Association in appropriating one-half million dollars as the Association's initial contribution to an annual fund to be raised by the medical profession to assist the medical schools has been widely applauded as one of the most constructive and important programs ever undertaken by the Association. In announcing the establishment of this fund, the Board of Trustees expressed the hope that the Association's contribution would be greatly augmented by gifts from many other sources and urged all members of the Association to contribute individually. The initial response of the profession has been most gratifying.

It can now be announced that the American Medical Education Foundation has been established as a not-for-profit corporation, under the laws of the state of Illinois, to receive and distribute contributions to the fund from the individual members of the medical profession and friends of the profession. The Commissioner of Internal Revenue has been asked to rule that gifts to the foundation will be deductible in the computation of income taxes. An 11 man board of directors chosen from the Board of Trustees, the officers of the Association and the Council on Medical Education and Hospitals will be responsible for arranging for the distribution of the funds to all approved medical schools. The funds are to be unrestricted, with each medical school free to determine how it can best use its share to further the basic training of its students. It is planned that the foundation will coordinate its activities closely with other major efforts to raise funds for medical education

from voluntary sources, which it is hoped will be announced shortly.

Each member of the medical profession is urged to demonstrate his support of this new undertaking by contributing promptly and generously. Because of rising costs, inflation, fewer large individual benefactions and reduced income from endowments, the medical schools need, without further delay, assistance of the type this fund can give. It is the desire of the foundation that the first annual disbursement of funds to the medical schools be made this spring. It is clear that, if the foundation's contribution is to be an effective one, a substantial fund must be raised by the medical profession within the next few months. It is therefore urged that each physician consider an annual contribution of \$100. Many of the contributions already received exceed this figure. When a physician feels that this amount is beyond his means, smaller contributions will be welcome, but the profession must recognize that substantial sums are required and that token contributions alone will not be sufficient.

Almost every physician now practicing received his medical education for less than what it cost his medical school. While many physicians have discharged this debt to society in full or in part, by public and charitable activities and by donations to the schools with which they have been associated, many are still indebted to one or more medical schools for their training as students, interns or residents. Furthermore, the medical profession has traditionally accepted a large measure of responsibility for the training of the continuing flow of young physicians, on which it must depend for recruits and replacements in its efforts to serve humanity. It is to be expected, therefore, that all physicians, regardless of the other contributions they may have made to society, will want to share in the responsibility of making the foundation a success.

The American Medical Association has indicated its belief that the possibilities of securing adequate support for medical education from voluntary sources are far from exhausted. To prove this, actions as well as words are required. The challenge has now been made directly to the medical profession. The members of the profession can

meet this challenge by sending their contributions to the American Medical Educa-

tion Foundation, 535 North Dearborn Street, Chicago 10.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

ONE EXAMPLE

W. A. Dozier, Jr.

Director of Public Relations

The other night the telephone rang. It was a friend calling to compliment a member of the medical profession in Alabama. Perhaps you think there is nothing unusual in that. I'm sure that if one were to listen to all conversations all over the State he could hear the same thing many times repeated. However, this case was special because of the background of the person calling and because of the physician involved. Let's look into it just a little further.

Let us say the caller's name was Tom. Tom is a young man of about twenty-five. He is extremely interested in politics, economics, and sociology and has spent much of his time studying and thinking in these fields. He is now in law school and very likely will make his life's work in some governmental position where he thinks he can do the most good for society. Tom is an intelligent fellow and also has a capacity for thinking, which capacity he uses. There was a time when Tom believed as many would have him believe; he thought physicians were hidebound reactionaries who closed their minds, and even their pores, to any proposed plan which would lead us as a race toward bigger and better things. Still Tom has some good ideas, some a little baseless, and some of outright dream material.

"I just called to say that Dr. A gave me a ride to Tuscaloosa last Sunday. I certainly was impressed by him as a man and more than that I was impressed by the things he told me the medical profession was doing to improve our present situation."

"I have been trying to tell you of those things for a long time, Tom; but you always seemed to refuse to believe."

"No. I believed you, but it was good to see an example of the type man you have spoken of and to have a chance to talk with him. I was most impressed by the various

things the profession is trying to do here in Alabama, things that most of us hear about but which seldom ever register with us."

"I'll say one thing, Tom. I'm awfully glad to see you gradually become a believer instead of one who stands off, scoffs, and even throws stones."

"You know I never did that. I just have to be shown."

"I respect you for that."

"There's one question I would like to ask. Is Dr. A an isolated example, or is he typical of the profession; that is, are the others as wide awake and as interested in matters political and sociological as he?"

"No. I don't think he is an isolated example by any means. Perhaps he is more active and more interested than some, but I could list others for you whom you would put in the same group as Dr. A. I don't mean I could list only one or two more but many."

"That's good. Well, I just wanted to tell you of the conversation and my impressions. How have you been?" And here the chat wandered on to other subjects.

Now, why all this fuss over a telephone conversation? There are two reasons. First, here was an excellent example of medical public relations in practice. Sometimes we are prone to emphasize the public relations angle between you, the physician, and your patient and forget that good public relations is practiced all the time. Tom's belief in what we are trying to do has been greatly strengthened because one physician, whom Tom didn't know, made the proper impression. Dr. A, besides carrying on a large practice, is active in the affairs of his County Medical Society, the State Medical Association, and the American Medical Association. He keeps abreast of the various developments and informs himself of present and future efforts and plans. Therefore, he

was in a position to speak, and with knowledge, on those matters which had been disturbing Tom.

And secondly, Tom's question about this example's being typical or atypical caused me to think. How typical is Dr. A? I believe him to be typical of a great segment of the Alabama physicians, but the real answer

in each case must be made by each individual. Now that you have read this far, ask yourself the various questions which will tell you whether you and Dr. A are in the same category. Are you? Only you can answer this, just as you and only you can prepare yourself to come out of a chance meeting with plaudits as Dr. A did.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

CARBON MONOXIDE IN HEATING SYSTEMS

Some time ago a resident of Crossville, Tennessee, found the bodies of a man and woman in an automobile in the town's business section. Evidently they had been dead for several hours. Investigation revealed the cause, a too common cause: They had been poisoned with carbon monoxide gas from a gasoline heater in the car.

From upstate New York came news of another death of this kind. A professor in the Rensselaer Polytechnic Institute had been found dead on the floor of his garage. The coroner attributed the death to accidental carbon monoxide poisoning.

An even worse tragedy occurred in Fayetteville, North Carolina. Five men were found dead in the garage of a motor firm. A preliminary verdict of accidental death from carbon monoxide was returned. There was an important prizefight being broadcast the night of the tragedy. Presumably these five men—two soldiers, two mechanics employed at the garage, and a traveling salesman—became so engrossed in the blow-by-blow description of the fight that they did not realize for a long time that they were gradually being overcome by the insidious gas. Their bodies were discovered when the garage opened for business the next morning. The hand of one of the mechanics was cut and bloody. That led investigators to think he became conscious of the creeping death and tried to do something about it by smashing a high window. But he must have been too nearly overcome by that time. His body was found crumpled

on the garage floor. The others were either in or beside automobiles. There were marks on the floor. So possibly all four realized their danger before death overtook them. But, if they did, they were too far overcome to help themselves or each other. According to the local chief of police, workers in the shop had been repairing heaters during the day and were working on cars while listening to the fight broadcast.

Fortunately, some victims of carbon monoxide poisoning manage to escape death. Sometimes their escape is due to their own efforts after they find out what has happened (when they are fortunate enough to make that discovery before it is too late). Sometimes they are saved from death by pure luck.

A case of that kind was reported some time ago from New York. Six marines went there from Camp Lejeune, North Carolina, for a week-end. When they reached the big city some of them were suffering from severe headaches. The others had other evidences of carbon monoxide poisoning. The car's muffler was broken.

A pedestrian observed their plight and called a police emergency crew. The four whose illness was more serious were carried by ambulance to a hospital. After treatment there, they were discharged, happy that they had escaped a worse fate.

Unfortunately, motorists and those who work with and around internal combustion motors are not the only potential victims of carbon monoxide poisoning. The danger also extends to residents of gas-heated houses and apartments. Everyone should be careful. For this is indeed an insidious and grave danger.

The natural gas with which most homes are heated consists for the most part of what is known as methane, although there may be slight amounts of another product, known as ethane. When everything is working well, there is nothing to fear. But various conditions can and do cause a room or whole building to be flooded with carbon monoxide, quick agent of death.

Heating and engineering authorities estimate that at least ten times as much air should be provided as there is methane. In other words, there should be ten cubic feet of air for every cubic foot of methane, if carbon monoxide is to be avoided. To express it still another way, a certain type of gas heater burns 20 cubic feet of natural gas an hour. To keep that heater safe, it should also consume 200 cubic feet of air every hour. Thus it is essential that gas-heated rooms be properly ventilated. But more of that later.

Another aspect of the carbon monoxide danger should also be mentioned and emphasized. As that ratio of 100 quantities of air per 10 quantities of gas is reduced, respiration tends to increase. Thus more of that dangerous air is breathed in a given time. That means that the intake of carbon monoxide is stepped up significantly. So materially reducing that ten-to-one ratio of gas to air provides a double hazard: It not only makes the air you breathe dangerous but it also causes you to breathe more of it.

It is essential, therefore, that gas heaters be properly constructed. They should be properly installed. And they should be properly maintained.

An authority on this subject on the staff of the Texas State Department of Health has worked out some ratios of carbon monoxide to air and indicated how they affect human life and the chance of survival. When that ratio is only 1/100 of one per cent—that is, one part of carbon monoxide per 10,000 parts of air—you can survive exposure of as long as eight hours without danger. When the concentration of carbon monoxide is increased five times—to 5/100 of one per cent—exposure beyond one hour is unsafe. When that ratio is stepped up three times—to 15/100 of one per cent—exposure is considered dangerous. And, finally, when the ratio is increased to 40/100 of one per cent, there is real danger. That Texas public

health worker says such exposure is “usually fatal within an hour.”

Alabama's public health agencies exercise no supervision over the construction and installation of gas heaters in public buildings or private residences. However, the firms authorized to install units of this kind and the workmen in direct charge of that work must meet high standards before they can engage in it. Too, in the case of schools and other structures of a public and semi-public nature, official inspectors are required to check the buildings and their equipment before they are accepted. Private citizens building new homes should take this precaution too. And the same is true of those who purchase new homes that have been used by others.

Equipment itself should be safe if it bears the emblem of the American Gas Association. For that emblem is regarded as a symbol of high class workmanship. It also is considered evidence that it meets high standards of safety. As a matter of fact, according to that already mentioned spokesman for the Texas State Department of Health, “for gas appliances the AGA emblem is usually considered the equivalent of the Underwriter's UL emblem found on electrical equipment and appliances.”

In either case, every family has a considerable responsibility for the safety of the equipment used to keep it warm. And constant vigilance should be maintained at all times. That is especially true of cold-weather time, however.

Here are some suggestions to keep in mind:

1. Keep at all times some form of vent to carry off any carbon monoxide that may form. You cannot be sure the equipment is operating properly. You cannot be certain that gas is not forming in dangerous quantities. So the only safe thing to do is to provide some means for it to escape out into the great outdoors, if and when it does form. That can be done quite satisfactorily by means of a pipe, or flue.

2. Keep a gas-heated room well ventilated at all times. Here again you cannot be sure that dangerous carbon monoxide is not being formed. And you cannot be absolutely sure that the vent flue mentioned just a few moments ago is carrying it off as it should (although, if properly installed, it

probably is). So play safe by admitting plenty of fresh outside air into the room. Burning natural gas is a hungry oxygen-eater. So an unventilated room being heated by a gas stove becomes deficient in oxygen. And remember oxygen is especially needed to combat the possible ill effects of carbon dioxide. (Fortunately, the already mentioned flue vent also serves as some sort of ventilator. For fresh air will enter through it to replace the gas fumes which the flue discharges. But it is not safe to depend upon that flue vent to do a satisfactory room ventilation job. Remember, your life may be at stake.)

3. Be sure at all times that plenty of air is admitted to your gas heater. This is necessary to insure complete combustion of the gas. It can be achieved in most cases only by adjustment of the air-mixing valves. Adjustments of this kind are usually too difficult to be made properly by the average householder. However, that is a part of the day's work for gas company employees. The householder can contribute to this adjustment by keeping the stove and all its parts as clean as possible. Accumulations of dust tend to reduce the amount of air entering the heating mechanism, with the result already mentioned.

4. Do not operate a gas stove or heater at excessive heat capacity. Some equipment of this kind is entirely safe from the carbon monoxide point of view as long as it is operated at moderate heat output but begins discharging carbon monoxide when "pushed." Particularly, do not substitute a larger gas pipe for the one installed by the manufacturer in order to get more heat from your heater or stove. The pipe that came with the equipment is of the correct size for safety. To try to get more heat by burning more gas than the manufacturer intended you to burn will almost certainly bring on the condition already mentioned. Your safe equipment will become unsafe. The heater that has been discharging no carbon monoxide, or practically none, begins discharging it in dangerous amounts.

5. Watch the flame in your radiant heater. If it extends above the radiant tiles in the equipment, it may be burning too much gas. And, remember, when that happens, from whatever cause, the heater is probably discharging dangerous amounts of carbon

monoxide. This does not mean of course that you have to be satisfied with insufficient heat. The answer is to obtain a heater that will give you the heat you need without exceeding its safety maximum. A larger heater will naturally provide a greater volume of heat without your "pushing" it.

6. Do not leave gas heating appliances burning while you and your family are asleep. As long as you or someone else is awake, quick action can be taken to prevent tragedy. But there is no one on guard after the lights are turned out and the family falls off to sleep.

Two dangers threaten families who take a chance of this kind: First, there is the normal chance of something's going wrong and the room's being flooded with killing carbon monoxide at a time when nobody is awake to do anything about it. In the second place, there are special hazards which occur between bedtime and getting-up time. For one thing, those who leave their gas heaters or stoves lighted through the night are relatively few in number. When the others cut off their gas equipment at bedtime, that tends to increase the pressure in the gas lines. The result is that the relatively few heaters still in operation are likely to begin burning much more gas than they did before. That brings on the peril already mentioned: Excessive gas consumption causes the discharge of dangerous amounts of carbon monoxide.

7. Stick to the kind of gas for which your heater or stove was designed. If it is a natural gas heater, use nothing but natural gas in it. If it was designed for propane or butane gas, don't use natural gas.

8. Place no trust in rubber tubing where your life or the lives of those dear to you are concerned. Time has a marked effect upon rubber. So does ordinary wear and tear, including being stepped upon and shoved around while someone is sweeping or moving the furniture. After a while it is almost certain to deteriorate and cease to be gas-proof. So it is dangerous to depend upon a piece of rubber tubing as a gas connection. All connections should be of some sort of metal. Either regular gas pipes or metal tubing should be all right. But even that should be carefully tested from time to

time to be sure that it is not leaking at a joint or valve.

Gas is one of Mother Nature's most generous and useful gifts. But it is also potentially lethal. Whether it serves you and your family usefully, capably and safely, or becomes an agency of death depends upon how wisely and well you or someone else uses it.

BUREAU OF LABORATORIES

Thomas S. Hosty, Director
SPECIMENS EXAMINED
The Year of 1950

Examinations for diphtheria bacilli and Vincent's	3,385
Agglutination tests (typhoid, Brill's and undulant fever)	13,774
Typhoid cultures (blood, feces and urine)	5,356
Examinations for malaria	7,023
Examinations for intestinal parasites	48,973
Serologic tests for syphilis (blood and spinal fluid)	311,311
Darkfield examinations	96
Examinations for gonococci	22,788
Examinations for tubercle bacilli	37,215
Examinations for meningococci	8
Examinations for Negri bodies (microscopic)	1,091
Water examinations	17,615
Milk and dairy products examinations	48,708
Miscellaneous	18,242
Total	535,575

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1950-1951

	Dec. 1950	Jan. 1951	E. E.* Jan.
Typhoid and paratyphoid	3	4	1
Undulant fever	0	3	1
Meningitis	6	13	10
Scarlet fever	86	57	81
Whooping cough	91	132	81
Diphtheria	23	29	37
Petanus	3	2	1
Tuberculosis	483	218	199
Eularemia	0	0	1
Amebic dysentery	2	2	1
Malaria	1	1	47
Influenza	154	771	1052
Smallpox	0	0	1
Measles	11	49	92
Poliomyelitis	12	9	2
Encephalitis	1	1	0
Chickenpox	212	267	228
Typhus	2	4	33
Rumps	41	101	123
Cancer	446	326	222
Pellagra	2	1	2
Pneumonia	171	195	507
Syphilis	760	195	963
Chancroid	20	6	13
Gonorrhea	317	189	563
Diabetes—Human cases	0	0	0
Positive animal heads	18	28	0

As reported by physicians and including deaths not reported as cases.
*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

SOME FACTORS AFFECTING THE FLAVOR
OF MILK AND MILK PRODUCTS

Contributed by

U. D. Franklin, B. S., M. S.
Chief Sanitarian

The flavor of milk and milk products has a marked influence on the quantities consumed. In choosing our foods, we choose those which appeal to our palates. Milk is usually included in our daily diet but the quantity we consume depends largely upon its flavor. The need for improving its flavor is well recognized. It not only affects the quantity consumed as fluid milk but the flavor is also reflected in the products made from it. High quality milk and milk products have a pleasing flavor. Unfortunately we spend but little time discussing this wonderful asset of dairy products. Instead we are mostly interested in the abnormal flavors that are sometimes found in these products.

Abnormal flavors in milk are caused by: (1) the physical condition of the individual cow; (2) highly flavored feeds and weeds; (3) biological, chemical and enzymatic changes in the milk; and (4) sometimes by odors absorbed by the milk during or after milking. These flavors caused by the physical condition of the individual cow and by highly flavored feeds and weeds are present at the time the milk is drawn, while those caused by biological, chemical or enzymatic changes and by absorbed odors usually do not appear until sometime after the milk has been produced. Strongly flavored feeds and weeds are the cause of a large percentage of the off-flavors found in milk. Investigations have shown that when corn silage, sorghum silage, legume silage, green alfalfa, cabbage and turnips are fed to dairy cows one hour before milking the flavor and odor of the milk are seriously affected. Green rye, green cowpeas, potatoes, dried beet pulp and carrots affect the milk only to a slight degree; whereas green corn, green oats and peas, pumpkins and sugar beets have practically no effect on the flavor and odor of the milk produced.

Feeding experiments with garlic and bit-terweed confirms the fact that feed flavors

enter milk mainly through the body of the cow. Milk is often made unsaleable by objectionable feed flavors. The physical condition of the individual cow is more than likely responsible for such abnormal flavors referred to as "cow," salty, and rancid. A salty taste is frequently observed in milk from cows that are advanced in lactation and also from those with one or more quarters of their udders affected with mastitis. Milk found to be salty because of mastitis should be eliminated. The milk of individual cows frequently becomes rancid. This rancidity is caused by the enzyme lipase and is usually found in milk from cows which have been milked for longer than the usual lactation period, but it may occasionally occur in milk produced during the first month of lactation. Cows producing such milk should be detected and removed from the herd. Lipase influences the processing of milk, especially homogenized milk. When raw milk is homogenized, the action of this enzyme on the finely divided fat globules causes it to become rancid within a few hours. The enzyme must therefore be inactivated by proper pasteurization to prevent enzymatic action in the milk.

The flavors most frequently produced by biological action are usually termed "bitter," "unclean" and, of course, "sour." The "bitter" and "unclean" flavors are most frequently due to the action of proteolytic organisms that find their way into the milk from unclean utensils or through other insanitary methods of production or handling. Flavor is a mighty word in the dairy industry. It is the governor that controls the quantity of milk and milk products that are consumed.

In conclusion, abnormal flavors may be largely prevented by milking only healthy cows, using proper feeding practices, and by milking and handling the milk under sanitary conditions.

Tuberculosis is such an insidious disease that no physician can deny the existence of it without adequate roentgenologic study. All patients, regardless of their complaints, should have the benefit of chest x-ray examinations. This is particularly true in conditions such as diabetes and pregnancy where a higher prevalence incidence of tuberculosis is found. Moreover, the taking of a single roentgenogram may not be enough, and so, with persisting symptoms or a suspicious lesion, the x-ray may need to be repeated.—*J. Mich. M. Soc., Kenneth J. Feeney, M. D., November 1949.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR NOVEMBER 1950, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During November 1950			November Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	6993	**	**	27.8	27.0	30.1
Total stillbirths	200	**	**	27.8	29.1	23.0
Deaths (stillbirths excluded)	2173	1247	926	8.6	9.1	8.5
Infant deaths:						
under one year	255	129	126	36.5	42.3	36.4
under one month	167	89	78	23.9	30.1	25.2
Cause of Death						
Tuberculosis, 001-019	56	24	32	22.3	33.2	27.0
Syphilis, 020-029	12	3	9	4.8	11.2	4.8
Typhoid and para- typhoid, 040, 041					0.4	0.4
Dysentery, 045-048	3	1	2	1.2	0.8	***
Scarlet fever, 050						0.4
Diphtheria, 055	7	6	1	2.8	1.2	2.4
Whooping cough, 056	3	3		1.2	0.4	1.2
Meningococcal infec- tions, 057	2	2		0.8	0.4	1.2
Poliomyelitis, 080, 081	4	3	1	1.6	0.8	
Malaria, 110-117	3	1	2	1.2	0.4	0.4
Malignant neoplasms, 140-200, 202, 203†	219	149	70	87.1	87.3	90.0
Diabetes mellitus, 260	30	15	15	11.9	11.6	14.1
Pellagra, 281	1		1	0.4	2.4	2.8
Vascular lesions of central nervous system, 330-334	258	138	120	102.6	100.9	85.5
Other diseases of nervous system, 300-318, 340-398	33	17	16	13.1	12.0	14.1
Rheumatic fever, 400- 402	1		1	0.4	2.8	0.8
Diseases of the heart, 410-443	645	406	239	256.5	265.9	213.0
Diseases of the arteries, 450-456	26	15	11	10.3	10.0	7.7
Other diseases of the circulatory system, 444-447, 460-468	35	16	19	13.9	10.4	3.2
Influenza, 480-483	15	6	9	6.0	5.6	4.8
Pneumonia, 490-493	88	45	43	35.0	34.4	38.7
Bronchitis, 500-502	2	1	1	0.8	1.2	3.2
Appendicitis, 550-553	3		3	1.2	3.6	3.2
Intestinal obstruction and hernia, 560, 561, 570	22	13	9	8.7	5.6	4.8
Gastro-enteritis and colitis (under 2) 571.0, 764	14	7	7	5.6	4.8	5.6
Cirrhosis of liver, 581	10	8	2	4.0	6.8	2.4
Diseases of pregnancy and childbirth, 640-689	7	2	5	9.7	25.9	14.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	1		1	1.4	4.3	1.3
Congenital malforma- tions, 750-759	21	10	11	3.0	4.3	4.7
Accidental deaths, total, 800-962	176	118	58	70.0	69.7	66.2
Motor vehicle acci- dents, 810-835, 960	74	61	13	29.8	28.4	28.2
All other defined causes	354	192	162	140.8	161.4	179.5
Ill-defined and un- known causes, 780, 793, 795	123	46	77	48.9	49.7	57.7

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the November report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

BOOK ABSTRACTS AND REVIEWS

The Physician Examines the Bible. By C. Raimer Smith, B. S., M. D., D. N. B. Cloth. Price, \$4.25. Pp. 394. New York: Philosophical Library, 1950.

You have heard and read about the man who could see "sermons in stones." Well, Dr. Smith can see, in the simple and complicated things of everyday life, not exactly sermons but reminders of God's great plan for man, as revealed in Holy Writ.

Perhaps you think such things as inflation, secret weapons and quislinism are new, born out of the excruciating labor of the Second World War. But—take it from Dr. Smith—they are as old as recorded history. In II Kings, 6:25, he reminds us, there is an account of a great famine, accompanied, presumably, by a great deal of money. Under what our present-day economists would call those "inflationary pressures," an ass's head brought "fourscore pieces of silver." He passes on II Chronicles 26:15 to his readers, who, unless they are better-than-average Bible students, will be surprised to know that in Jerusalem there were "engines (presumably engines of war), invented by cunning men, to be used on the towers and upon the bulwarks, to shoot arrows and great stones withal." Those secret weapons of New Testament times were not as destructive as Hitler's V-1 and V-2. But they must have created as much consternation among those who first saw them as the flying torpedoes of 1945 created in Belgium and London. And, as for Old Testament quislings, the erudite Dr. Smith refers us to II Kings 23: 33-37. There we read about Eliakim, whom Pharaoh-nechoh made "king in the room of Josiah his father" and "turned his name to Jehoiakim." In this quislinish deal, "Jehoiakim gave the silver and the gold to Pharaoh."

There is more of the same thing, much more. Dr. Smith certainly knows his Bible. He gives chapter and verse for any number of references to human ills that we are inclined to consider products of our age. He points out, however, that most of the diseases mentioned in Holy Writ take the form of symptoms or "anatomical parts of the body," rather than actual disease entities. But, even at that, certain parts of the Bible to which he calls attention read very much like something out of the current A. M. A. Journal or this one.

Dr. Smith apparently has labored almost as diligently over his medical concordances and index as over the text of his extremely revealing book. Thanks to them, the reader can go directly to almost any subject having to do with illness and medicine, as well as numerous others, and see what Holy Writ has to say about them.

John M. Gibson

Bronchoesophagology. By Chevalier Jackson, M. D., Sc. D., LL. D., F. A. C. S., Honorary Professor of Bronchoesophagology and Laryngeal Surgery; and Chevalier L. Jackson, M. D., M. Sc., F. A. C. S., Professor of Bronchoesophagology and Laryngeal Surgery, Temple University, Philadelphia. Cloth. Price, \$12.50. Pp. 366, with 260 illustrations. Philadelphia: W. B. Saunders Company, 1951.

It is fitting that the man who has been most instrumental in developing endoscopy, and whose name is attached to almost every instrument, should be the author of this most complete and up-to-date text on bronchoesophagology.

The present volume deals extensively with medical and diagnostic bronchoscopy, as well as with foreign bodies, and thus will have a wider interest for the surgeon and internist as well as the otolaryngologist. Diagnostic bronchoscopy has become an increasingly important instrument in chest work in recent years.

The illustrations drawn by the author are excellent. The text is clear but more authoritarian than many medical men may like. Dr. Jackson's demand for extremely meticulous techniques, while galling to anyone who would like to experiment, are the result of a lifetime dedicated to correct bronchoscopy. There is no field of surgery where small deviations from exact procedure can be more disastrous.

Concise enough for the surgeon, complete enough as a reference for the endoscopist, it contains an extensive bibliography giving reference to many controversial issues omitted in the text.

Paul S. Mertins, Jr., M. D.

Child Psychiatry in the Community. By Harold A. Greenberg, M. D., Senior Staff Psychiatrist, Institute for Juvenile Research, Chicago; Assistant Professor of Criminology, College of Medicine, University of Illinois, Chicago; in collaboration with Julian H. Pathman, Ph. D., Helen A. Sutton, R. N., B. A., B. S., and Marjorie W. Browne, B. A., M. A. Cloth. Price, \$3.50. Pp. 292. New York: G. P. Putnam's Sons, 1950.

Written as a "primer for teachers, nurses and others who care for children," this book defines with a simple non-technical text and a profusion of illustrative cases the scope of child psychiatry in the community. The senior author and his collaborators from the fields of psychology, nursing and social work have assembled from their experiences, particularly at the Institute of Juvenile Research, Chicago, a simple instructive manual on child guidance.

The first part of the book is devoted to "The Child." Its chapters concern themselves with the child guidance movement, the diagnostic, prognostic and therapeutic considerations of clinic work. Chapters on "Personality Development"

and "Psychogenesis of Behavior Problems" reflect the dynamic Freudian approach to the problems of children. The senior author succeeds in presenting the doctrine of infantile sexuality, oedipus and castration in a manner least likely to generate the usual hostility in his lay readers. The second part attempts to define the interrelated functions and responsibilities of the various members of the guidance clinic team and the manner in which these are integrated into a functional unit.

The third section examines the problem of child guidance as it relates to the teacher and the nurse. While the impact of the parents' personality on child development is now quite generally recognized and accepted by the informed laity, the latter is not as conscious of the enormous influence of the personality configuration of teacher on child development especially during the late Oedipal and latency periods. The educational considerations apart, this indifference or, at best, complacency manifested by civic, state and federal authorities to the mental hygiene applications of the caliber and morale of the teacher has no counterpart in bureaucratic myopia.

The chapters on "The Psychiatrist's Role as Consultant in a Children's Institution" and "Emotional Problems in a Hospital-School for Crippled Children," while representing particular circumscribed interests in the senior author's experience, serve to emphasize the value of child psychiatry in medical spheres not immediately associated with this specialty. The chapter on Juvenile Delinquency is perhaps most notable in that the author relinquishes with rare modesty the preeminence of the psychiatrist as the prime mover in this field. Without suggesting that the delinquent is not a problem for the psychiatrist, he indicates that the sociologist appears to be theoretically, and in cited cases, practically more effective in meeting the delinquent problem at the community level.

The book has appended statistical tables of the Institute of Juvenile Research, samples of various work sheets used at this clinic, a glossary of short non-technical definitions, and a list of suggested reading on this and related topics.

In all this is a useful book, perhaps more valuable for those associated with child guidance clinics but not without considerable merit for those "who care for children."

Philip S. Bazar, M. D.

Radium Therapy: Its Physical Aspects. By C. W. Wilson. Cloth. Price, \$6.00. Pp. 224, with 97 figures. Chapman and Hall, Ltd., London. Washington, D. C.: The Sherwood Press, 1945.

The author of this small book is a hospital physicist at the Westminster Hospital, London, one of the important centers for radium therapy in England.

The book can be divided into two sections: a physical section, and a clinical one. The physical

section covers the essential facts about the physical nature of radium and its disintegration products, the phenomena of the interaction between matter and the irradiation from radium, methods of measurement of radium irradiation, and the calculation of dose rates obtained with sources of various shapes.

The clinical section discusses the mechanical aspects of the use of radium in therapy—types of applicators, arrangement of sources within these applicators, and the approximate doses obtained with surface and intracavitary applicators, in interstitial therapy, and in teleradium therapy. The systems of Patterson and Parker are discussed particularly, and the dosage tables of Quimby mentioned only briefly.

The physical and radiobiological portions are well written, with economy that has not sacrificed clarity. Lack of familiarity with calculus should not prevent comprehension. A basic knowledge of radiological physics seems essential, however. A particularly noteworthy feature is the presence in the appendix of a large part of Sievert's table for calculation of doses in the neighborhood of a radium needle since these values are difficult to obtain without access to the volumes of the *Acta Radiologica* of 1921 and 1930. The discussion of filtration of radium sources is excellent. It is unfortunate that Spier's work on energy absorption of various tissues, and the clinical significance of this, has been omitted.

The clinical section is a good outline of British methods, with which we should be more familiar. It has a convenient summary of the distribution rules of Patterson and Parker, but does not attempt to explain the development of these rules, which is regrettable.

This book is a valuable one for the radiologist who wishes to improve his understanding and use of radium, and for those being trained in radiology, since it collects and summarizes with clarity much that is scattered through various British and American periodicals over a thirty-year period. The dermatologist and surgeon will find it valuable but perhaps more indigestible unless he has some familiarity with radiological terminology. The most important defect of the book is that it is now six years old.

W. F. Reynolds, M. D.

Current Therapy 1951. Latest Approved Methods of Treatment for the Practicing Physician. Editor: Howard F. Conn, M. D. Consulting Editors: M. Edward Davis, Vincent J. Derbes, Garfield G. Duncan, Hugh J. Jewett, William J. Kerr, Perrin H. Long, H. Houston Merritt, Paul A. O'Leary, Walter L. Palmer, Hobart A. Reimann, Cyrus C. Sturgis, and Robert H. Williams. Cloth. Price, \$10.00. Pp. 699. Philadelphia and London: W. B. Saunders Company, 1951.

In this, the third annual volume, the Editor, Dr. Howard F. Conn, attempts to keep up with the progress on the therapeutic side of medicine. From a purely mechanical standpoint, preparing

and editing a volume of this scope is a monumental task. Medicine is never static and for this reason the volume on Current Therapy must be kept fluid. Since the 1950 edition Dr. Conn has added forty-nine (49) new contributors to the editorial staff, and eighty-six (86) of the treatment methods are completely new. By these changes and additions the Editor attempts to keep the current volume abreast of modern trends in therapy.

Each contributor has been carefully selected for his interest in the particular condition about which he writes. Consideration is also given to choosing recognized authorities in each field of medicine. Methods of treatment as outlined in this volume are those in current use by the clinician writing them, and not obsolete methods formerly in use. In many instances more than one method of treatment is outlined; where this is done, no choice is made by the Editor as be-

tween two or more methods of treatment, thus leaving the way open for any clinician to adopt whatever method seems best suited to his situation.

The material of this book is limited to treatment and does not enter into discussion of diagnosis except where such discussion of diagnosis may be an integral part of the treatment. It is presumed that an adequate diagnosis has been made, and this book is offered as a concise reference in current therapeutic methods.

Every clinician in active practice wishes at times for a quick refresher course on the treatment phase of medicine. There is probably no other book available today which more thoroughly fills this requirement than Current Therapy 1951. Current Therapy 1951 should be a valuable addition to the library of any physician engaged in active practice.

J. M. Barnes, M. D.

AMERICAN MEDICAL ASSOCIATION NEWS

SAYS CIVIL DEFENSE PLANNING MUST INCLUDE GERM WARFARE

Plans for civil defense in event of war must include the possibility of biologic or germ warfare, a national health director said, adding that more knowledge and better equipment are necessary if maximum protection of the population is to be insured in case of such an attack.

Dr. Victor H. Haas of Bethesda, Md., Director of the National Microbiological Institute of Health, Public Health Service, Federal Security Agency, discusses biologic warfare in an article in the March 24 Journal of the American Medical Association. The article was prepared by Dr. Haas at the request of the Council on National Emergency Medical Service of the A. M. A.

"It is possible," Dr. Haas said, "that biologic warfare may never be employed . . . still, plans for defense must take into account all the conceivable capabilities of a potential enemy, including biologic warfare."

Dr. Haas believes that the goal of an enemy who intentionally spreads germs would be to cause incapacitating illnesses rather than extensive fatalities. This would tax medical, health and economic facilities to a great degree. As an illustration, he cited industrial plants in which effective-

ness would fall off sharply if even less than 20 per cent of the employees failed to report for work and the serious handicaps which would result if key individuals died or could not report for work.

"Whatever the direct damage in terms of sickness, death, decreased efficiency and confusion, there would also be a psychological reaction on the part of the attacked population. Fear of the unusual or the unknown has panic potentialities, and this aspect of the problem would require serious consideration; undoubtedly an enemy would make every effort to exploit it."

One of the principal routes which would be used to spread germs, in Dr. Haas' opinion, would be the air, although drinking water, milk and other foods, drugs, cosmetics, money or papers are also possible methods of dissemination. Our physical senses alone would not tell us that germs are present as they would probably be odorless, tasteless and colorless, he said.

None of the present methods of testing water, milk and food products and of sampling air are immediately applicable for detection of biologic warfare agents, Dr. Haas said.

"While these limitations must be faced, they do not justify a policy of inaction or delay. Some of the simpler operations of

sampling and identification should be put into effect, and it may be anticipated that experience and research will ultimately overcome many of the initial difficulties, while others can be minimized by efficient organization."

He advised "more knowledge and better equipment . . . to permit development of defense against biologic warfare to the extent that would permit maximum protection of personnel subject to attack."

The nine specific research projects he named as necessary to strengthen our defenses are: 1, development of air sampling devices capable of detecting a wider variety of agents than currently possible; 2, more rapid methods for isolation and identification of disease agents; 3, methods for active immunization after exposure; 4, antigens capable of immunizing against whole classes of organisms rather than individual species or strains; 5, mass immunization procedure which would permit immunization by inhalation of antigens by large numbers of people simultaneously; 6, procedures for sterilization of large air masses; 7, information on optimal dosages of disease agents and on infection rates after exposure to known dosages; 8, measures for arresting infections during the incubation period by adequate yet economical treatment; 9, specific treatment for diseases caused by smaller viruses.

Once an attack has occurred, civil defense must be directed toward minimizing the effects of an attack, he said. "This would include limiting the number of casualties; shortening the period of morbidity; reducing or preventing fatalities, and preventing development of secondary cases."

One of the first steps in control of disease is the ability to recognize its presence. This ability, according to Dr. Haas, "can be developed to a greater state of efficiency than is usually considered necessary for peacetime communicable disease control."

For example, influenza, typhus, Q fever, typhoid and cholera are a few of the germs believed to be possible biologic warfare agents. The doctor, by knowing what constitutes the usual incidence of certain diseases in a particular locality at various seasons, can quickly recognize any unusual illnesses or familiar illnesses occurring in unexpected numbers. Any suspicious cir-

cumstances should be immediately investigated to determine whether or not the outbreak occurred as a result of biologic attack.

Absenteeism from schools or certain industries, overloading of hospitals and clinics—evidence of outbreaks of communicable disease in peacetime—should alert authorities that an attack might have taken place.

"Adequate preparation in advance and proper reaction after an attack," said Dr. Haas, "will . . . permit limitation of natural outbreaks and . . . may confidently be expected to achieve control over infectious agents deliberately disseminated."

In the same issue of the A. M. A. Journal, Dr. James C. Sargent, Milwaukee, Wis., chairman of the A. M. A. Council on National Emergency Medical Service, viewed the prodigious role that health and medical professions must play in the civil defense picture as a whole. Dr. Sargent said:

"Civil defense stands alongside military defense as a vital component of our national security. This responsibility for national survival now rests on every citizen . . .

"It would be impossible to overestimate the importance of the civil defense medical and health services to the nation's survival in this regard. The sick must be cared for; enormous numbers of casualties must be treated, and all must be protected from the communicable diseases that could accompany the disruption of normal public health and sanitary safeguards . . .

"Plans must be made in peacetime, since the opportunity for careful preparation and organization is irrevocably lost during the confusion and urgency that is attendant on war. All trained health personnel, including dentists, nurses, veterinarians, pharmacists, sanitary engineers, technicians of all types, as well as physicians, must participate and must cooperate wholeheartedly and unselfishly with each other and with those in authority . . .

"There are numerous responsibilities that devolve on the members of the health professions because of the possibilities inherent in the enemy's use of the newer weapons of warfare. The detection of atomic, biologic or chemical warfare agents, as well as the treatment of casualties from their effects, entails specialized knowledge and facilities that should be supervised, for the most part, by the health professions . . ."

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ABNORMAL UTERINE BLEEDING

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One of the frequent causes for a woman to consult a doctor is abnormal uterine bleeding. Many times the cause for this symptom is obvious, but again it may be a baffling diagnostic and therapeutic problem. Because of the difficulty in diagnosis and the speculative administration of many different methods of therapy, it is to be expected that confusion will occur in the consideration of some patients with this trouble. Since the Endocrine Clinic at the Medical College of Alabama has been functioning, several hundred patients manifesting the symptom of abnormal uterine bleeding have been seen. Various methods of therapy which have been advocated were tried on a substantial number of these patients to evaluate their efficacy. As a result of these studies the following routines were found to be efficient ways of handling the problem.

ETIOLOGY

In considering so complex a group of patients, whose only common denominator is abnormal uterine bleeding, some simplified method of classification should be used.

This may be done by dividing these patients into three categories; viz., abnormal uterine bleeding due to (1) organic lesions of the uterus, (2) effects of constitutional disease and disease processes outside the uterus, and (3) functional disorders.

From the Endocrine Clinic, Department of Gynecology, Medical College of Alabama.

Read before the Association in annual session, Birmingham, April 21, 1950.

Bleeding from organic lesions of the uterus is due to an abnormal situation produced by a local disease process in the uterus. There is no effect on the general endocrine mechanism. Such conditions are complications of pregnancy (abortions, ectopic pregnancy, retained products of conception, subinvolution of the postpartum uterus, placental polyps, fibromyomata and polyps).¹

Abnormal uterine bleeding as a manifestation of a constitutional disease may be one of the first noticeable symptoms. Because of this, a complete diagnostic survey must be made to discover if such a disease process exists. The mechanism by which a constitutional disease causes abnormal bleeding is by its effect on the pituitary gland or on the ovaries to cause relative failure of function of one or both organs.

This often results in an anovulatory type menstrual cycle. If the effect of the disease process remains uncorrected or progresses, complete failure with amenorrhea will probably result. Such are the acute and chronic diseases, as tuberculosis, nephritis, syphilis, typhoid, malaria, obesity, malnutrition, blood dyscrasias and many others.

Intrinsic disease of the endocrine glands, such as the thyroid, adrenals or functioning tumors of the ovary, may cause a disruption of the normal endocrine relationship resulting in abnormal bleeding.

1. Word, B.: Abnormal Uterine Bleeding, Mississippi Doctor, 25: 146-152, November 1948.

Inflammatory or destructive lesions involving the ovaries may leave these organs so impaired that a state of relative ovarian failure is present, resulting in an anovulatory menstrual cycle with its attendant irregular and prolonged periods of bleeding.

These patients are combined in one group because the effect of the disease on uterine bleeding is indirect, usually causing relative failure of the pituitary or ovaries, with anovulatory cycles resulting. Also, the control of the abnormal bleeding is similar for the entire group, although the underlying disease processes are different.

Functional uterine bleeding is an abnormal or excessive loss of blood due to a disturbance of the physiologic mechanism between the pituitary gland and ovaries. Factors which at times may be operative are psychogenic disturbances and minor deviations of the general health and nutrition.

Functional bleeding may be of two types: (1) anovulatory or (2) ovulatory.

Anovulatory bleeding implies that ovulation failed to occur in the ovary, therefore no corpus luteum is formed and no progesterone is secreted to cause progestational changes in the endometrium. Bleeding would be from a proliferative endometrium, tending to occur in irregular cycles, often accompanied by profuse and prolonged episodes. If this condition persists for any length of time, the proliferative endometrium will become hyperplastic or of a "Swiss cheese" pattern due to the prolonged action of subnormal amounts of estrogen alone on the endometrium.

Functional disturbances of an ovulatory type have regular cycles but the menstrual periods are prolonged and profuse. Irregular shedding of the endometrium is of this type. Inception of this dysfunction often follows a pregnancy and is thought to be due to a pituitary gland or corpus luteum disturbance, with failure to produce sufficient quantities of progesterone.² Many are self corrected but some persist to become problems, causing a strain on the hemopoietic system.

As mentioned above, in all instances functional uterine bleeding is probably as-

sociated with a relative or complete progesterone deficiency. It is because of this fact that progesterone may be used to control abnormal uterine bleeding unless due to organic diseases of the uterus.

METHODS OF DIAGNOSIS

After reviewing the many causes of abnormal uterine bleeding it is obvious that indiscriminate therapy is unjustified. Each patient presents a diagnostic problem which should be carefully evaluated before definitive therapy is given.

This study should include a detailed history and a complete physical examination, with speculum visualization of the cervix and bimanual palpation of the pelvic organs. The general health status of the patient should be appraised by routine laboratory studies of urine, blood counts, serology and sedimentation time. Additional special laboratory studies are often necessary to complete the diagnosis of some disease process which may be a factor in causation of the abnormal bleeding.

Although many organic lesions of the uterus are apparent by the ordinary methods of examining a patient, some instances will require special procedures, such as curettage or biopsy, to make a diagnosis.

In all women over 35 years of age who manifest abnormal uterine bleeding as a symptom, a curettage is mandatory to rule out the presence of a malignancy. In all women except those of adolescent age, the visualization of the cervix is necessary to aid in the diagnosis of cancer of the cervix. Biopsy of a suspicious lesion should be done at any age.

After satisfying the requirement that no local organic disease of the uterus is present, careful study of the patient as a whole must be made to ascertain whether or not a disease exists somewhere in the body which is causing the abnormal uterine bleeding. This is the difficult group to diagnose and requires frequent use of special laboratory and diagnostic studies.

The diagnosis of functional uterine bleeding is made largely by the exclusion of the first two groups. In many instances the diagnosis of functional bleeding will be changed to one of the above classifications when further study has been made.

Of aid in determining between anovulatory and ovulatory functional bleeding are

2. Holmstrom, E. G., and Jones, W. J.: The Experimental Production of Menorrhagia by Administration of Gonadotropins, *Am. J. Obst. & Gynec.* 58: 308-317, August 1949.

basal temperature charts, endometrial biopsy, curettage, and the careful differentiation between irregular and regular menstrual cycles.

TREATMENT

The treatment of any disease should tend to approach the physiologic mechanism of the body as near as one can with our present day knowledge. Treatment should be as simple as possible without losing any benefits which might be derived by the use of some other procedures or method.

In the handling of bleeding problems many procedures have been used which are unphysiologic and more destructive than the particular underlying cause would require. By first making a diagnosis, a more accurate application of the necessary treatment can be done.

In organic disease of the uterus the treatment is primarily surgical and never by the administration of hormones. Curettage is often therapeutic as well as diagnostic in this group. Also, definitive surgery, such as hysterectomy, myomectomy or irradiation, is often indicated for cure of the underlying cause of the abnormal bleeding.

In the second group, where the bleeding is due to diseases elsewhere in the body than the uterus, it is obvious that these diseases must be treated before the abnormal uterine bleeding will be corrected. However, where the patient is depleted from hemorrhage, or the underlying disease process is not readily diagnosed or amenable to treatment, control of the bleeding is necessary. This may be accomplished in these patients by the same methods as are outlined below for the anovulatory functional bleeding group.

The abnormal bleeding episodes in functional disorders may always be controlled by physiologic application of certain hormones. With these hormones becoming more available commercially and more is learned about the physiologic mechanism of menstruation, it is less often necessary to resort to destructive surgical and irradiation methods of treatment which were a few years ago the only certain method of handling these problems.

Where functional bleeding alone is the difficulty, major surgical procedures are unnecessary for control. However, if, after the childbearing period, such lesions as fi-

bromyomata, prolapse, cystocele, etc., are associated with functional bleeding, total hysterectomy would be the procedure of choice. Because of its sudden profound effects on the physiologic make-up of a woman, irradiation is a poor method of therapy for handling functional bleeding. The menopause is sudden and severe without allowing a gradual period of adjustment.

For the patient with irregular (anovulatory) profuse and prolonged functional bleeding, this may be regulated by the giving of progesterone, 25 milligrams, intramuscularly daily for four to five days.³ Bleeding will slacken or cease but two to eight days after stopping the progesterone, withdrawal bleeding will occur which may be very profuse. It usually lasts four to eight days and after this ceases there will be a three or four week period during which time no bleeding will occur. If any bleeding or spotting takes place during this interlude, some organic lesion is present which would necessitate a curettage for diagnosis. Progesterone therapy should be repeated on the eighteenth to twenty-first day following the beginning of withdrawal bleeding and should be given for two or more cycles.

During the initial treatment with progesterone, the profuse bleeding may not be immediately controlled. The addition of testosterone propionate, 25 milligrams daily, to the progesterone for a few days will usually cause rapid cessation of bleeding.⁴ It is rarely necessary to add testosterone after the initial series of progesterone therapy. This combination is especially valuable in stopping the profuse bleeding episodes encountered during puberty where curettage is never desired and seldom indicated.

At the other extreme of menstrual activity, the irregular profuse bleeding of the climacteric, once cancer has been ruled out by a curettage, may be controlled by progesterone (10-20 milligrams) or Pranone (30-60 milligrams) daily for five days every

3. Smith, G. V. S.: The Management of Abnormal Uterine Bleeding, *New England J. Med.* 241: 410-413, September 15, 1949.

4. Greenblatt, R. B., and Kupperman, H. S.: Further Studies on the Control of Menorrhagia, *J. Clin. Endocrinol* 6: 675-687, October 1946.

25 to 30 days.* This prevents the formation of endometrial hyperplasia with its profuse and prolonged bleeding episodes.

For patients with regular (ovulatory) profuse and prolonged functional bleeding, progesterone, 25 milligrams daily, may be given for five days beginning on the eighteenth day of each cycle. In most instances the prolonged bleeding episodes are reduced to a three to five day flow much to the surprise of the patient. The physiologic principle used here is the addition of progesterone to a deficient secretion of this hormone by the corpus luteum.

A less physiologic though effective and more economical procedure is the use of estrogens beginning four days before the expected period and continued until the bleeding ceases. This will reduce the menstrual period to a three to five day flow. Dosage of estrogen should be 3.75 milligrams of estrone sulphate or 0.15 milligrams of Estinyl daily. The physiologic principle here is to elevate the estrogen level in order that regeneration of the endometrium will occur.

In the final analysis of treatment for functional bleeding, the best and most definitive therapy is that elevating the general health standards of the individual. Rest, exercise, elimination, proper diet and freedom from tension or worries will be of great therapeutic value.

There are several other preparations which may be of value in controlling profuse uterine bleeding.

In controlling bleeding from the non-pregnant uterus, pitressin-tannate in oil, when given in 2 cc. doses (10 pressor units), will stop bleeding about three-fourths of the time.⁵ This is valuable where hormonal therapy is undesirable and no other method of control is immediately available. Testosterone propionate in 25 milligram doses given three times weekly will control pro-

fuse bleeding, but when it is discontinued the bleeding often resumes.

Not to be forgotten is the use of ergotrate gr. 1/320 either intramuscularly or orally every four hours for six or eight times in complications of pregnancy where contraction of the uterus is desired for the control of bleeding.

SUMMARY

Abnormal uterine bleeding has been broken down into three categories; viz., (1) organic lesions of the uterus, (2) effects of constitutional diseases and disease processes outside the uterus, and (3) functional disorders. From the standpoint of these three groups, diagnosis and treatment have been discussed with regard to the procedures and methods found most efficacious in our Endocrine Clinic.

Hobbies and Health—A hobby affords a means of relaxation and recreation that is unattainable by other measures. While working the hobbyist is as completely disconnected from his usual world as though he were in another sphere, and the tensions built up during the day have their release. For many years I have made it a point to find out all about the hobbies of my patients and have been increasingly more and more surprised at how few of those who have functional or neurotic complaints have such an avocation. I do not think that this observation depends upon mere chance. There are no reliable figures as to the actual number of true hobbyists in this country, but the figure must be enormous when one considers the great number of publications devoted in whole or in part to this sort of thing. Most of these periodicals do not appear on the newsstands. It might be argued that people who pursue hobbies are fundamentally well-adjusted individuals and therefore not subject to functional disorders. This is not true, and more probably the opposite is the case. It is the poorly adjusted, the sensitive, the imaginative, and the withdrawn who adjust themselves to their world in this fashion.

The rapid forward strides of medical knowledge and practice during the past few decades have markedly increased life expectancy among us humans. This means that as time progresses there will be more and more of us in the older age groups. An increasing number of us will face automatic retirement, even though we may be as good as ever mentally and physically. Old age security, pension plans and life insurance are on the increase and will provide the means for a more comfortable old age for many. However, for the man without a hobby retirement can be most distressing, for he will suddenly be left with nothing of a constructive nature with which to occupy his time.—Gibb, *M. Ann. District of Columbia*, Apr. '51.

*Progesterone (Proluton), Pranone, testosterone propionate (Oretone) and Estinyl supplied by Schering Corporation.

Estrone sulphate supplied as Premarin by Ayerst, McKenna & Harrison and Cogenat by National Drug Company.

5. Benson, R. C.: The Arrest of Abnormal Uterine Bleeding with Pitressin Tannate in Oil, *Am. J. Obst. & Gynec.* 55: 286-292, February 1948.

RESUSCITATION OF THE NEWBORN INFANT

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In dealing with infants and children, the physician is very often faced with the problem of the newborn who does not respond properly when delivered, and is then called upon to undertake a number of procedures in order to produce a living child, capable of extrauterine life. Fortunately, much has been written to help the physician with this problem, but at the same time, with many new findings being reported every now and then, a review of the current thought along this line might be helpful in establishing in our minds a logical approach to the subject of resuscitation.

"The Egyptians, recording their pediatric knowledge in the Papyrus Ebers, stated that the prognosis of the child can be determined on the day of his birth. If he cries 'nee,' he will live. If he cries 'ba,' he will surely die."¹ Unfortunately, they do not tell us what to expect if he doesn't cry at all, and that is the problem with which this discussion is concerned.

In order to demonstrate the need for an understanding of the principles of resuscitation, it is necessary only to mention that in Potter's² figures for the causes of infant and fetal death at the Chicago Lying-In Hospital for 1931-1941 anoxia ranked highest with the rate of 28.7 per cent of the deaths, with primary prematurity and congenital malformation second and third, respectively. Excluding the stillborns from such an analysis, Clifford³ states that injuries due to anoxia are responsible for about 60 per cent of the deaths among full term and premature infants. It is disheartening that these figures should be so high, and actually they represent an increase in infant mortality from this cause, because in the drastic reduction of maternal mortality by the use of analgesics, anesthetics, and the specialized

operative types of delivery, the infant has been subjected to new and dangerous risks, many of which predispose to asphyxia.

It is most important that the physician investigate the possibility of asphyxia in the newborn, and make plans to prevent this condition, or, failing in this, to begin resuscitation of the infant intelligently. Too often we see a newborn who does not breathe spontaneously immediately following birth grabbed up by the heels, have his blood supply from the placenta immediately severed, struck violently on the back, swung to and fro in the air, plunged unmercifully into a pan of cold water, have a pair of thumbs jabbed against his ribs 50 times a minute, then have his alveoli burst with a sudden blast of air from the physician's mouth. When we see this sort of thing happen, we are challenged to try to understand why the infant does not breathe in the first place, and, secondly, what we can do to correct this condition.

CAUSES OF APNEA

In considering the factors which could cause apnea in the newborn, it is understandable that the condition could have arisen before birth, during labor, or could have occurred immediately following birth. Prior to birth,⁴ some of the causes are maternal toxemias, intrauterine compression or twisting of the cord, knots in the cord, or prolapse or rupture of the cord, placenta previa, or premature separation, tetanic contraction of the uterus with ischemia of the placental site, premature rupture of the membranes with aspiration of mucus, amniotic fluid, vernix, or lanugo, or other fetal conditions such as prematurity, erythroblastosis, or congenital anomaly resulting in anoxia.

During labor, long continued pressure on the cranial contents during the second stage, particularly in operative deliveries, can cause asphyxia. Abnormally short labors sometimes result in severe trauma to the head producing cerebral hemorrhage or

1. Wolpe, L. Z., and Birnberg, V. J.: Analgesia and Anesthesia in Relation to Asphyxia Neonatorum, *Ann. West. Med. & Surg.* 2: 103, 1948.

2. Potter, E. L.: Lessons to Be Learned from a Study of Infant Deaths, *J. A. M. A.* 124: 336, 1944.

3. Clifford, Stewart H.: Fetal Anoxia at Birth and Cyanosis of the Newborn, *Am. J. Dis. Child.* 76: 666, 1948.

4. Stone, E. L.: *The Newborn Infant*, Philadelphia, 1945, Lea & Febiger.

tears. The analgesics and anesthetics are prone to narcotize the respiratory centers or otherwise interfere with the proper oxygenation of the tissues. It has been pointed out by Russ⁵ that asphyxia is much more common in babies delivered by cesarean section than would be expected.

Even after birth asphyxia is sometimes initiated.⁶ With aspiration of excessive amniotic fluid, vernix, mucus, or blood, there is occasionally penetration to the finer bronchioles or alveoli with formation of a vernix membrane which may give rise to asphyxial symptoms some days after birth. Also infections, atelectasis, cardiac decompensation and injuries might give rise to asphyxia after birth.

All of these etiologic factors may result in what might be generally classified as anoxia, narcosis, shock, or brain damage, any one or any combination of which might cause apnea.

PHYSIOLOGY OF ANOXIA

It is particularly noted that the majority of the above causes produce anoxia, therefore it is only evident that in apneic infants, anoxia is the chief factor. Initially there is usually the stagnant type of anoxia in which the circulation is so retarded that oxygen is not transported rapidly enough to maintain its optimum tension in the active tissues, but then there develops the anoxic anoxia in which the hemoglobin is not saturated to the normal extent.⁷ There is a decrease in oxygen content, and a decrease in the pH of the blood due to an accumulation of carbonic and lactic acids. This acidosis may then result in states of excitation, discharge of energy, and finally exhaustion or paralysis of nerve tissue, loss of tone and dilation of heart muscle; as well as loss of tone, dilatation, liberation of plasma, and hemorrhage in blood vessels. These changes result in congestion, edema, hemorrhage, and death of tissue.³

5. Russ, J. D.: Resuscitation of the Asphyxiated Baby Delivered by Cesarean Section, *New Orleans M. & S. J.* 98: 415, 1946.

6. Campbell, W. A. B.: *Asphyxia Neonatorum*, Practitioner, 162: 339, 1949.

7. Anderson, N. A.: *The Newborn Infant*, in Nelson, W. E.: *Mitchell-Nelson Textbook of Pediatrics*, Philadelphia, 1945, W. B. Saunders Company.

EFFECTS OF ANALGESICS, ANESTHETICS, AND METHODS OF DELIVERY

The role played by the administration of analgesics and anesthetics deserves some mention in this subject. In reviewing the obstetric literature we are pleased to read of the gains made by use of these agents. However, it must be kept in mind that most of the drugs and gases used readily cross the placental barrier thus entering the fetal circulation where they may produce harm to the fetus and create grave problems of resuscitation of the newborn.

Smith⁸ reports the incidence of spontaneous respiration with various drugs and combinations, a few of which deserve mention in this discussion. The incidence of spontaneously breathing infants born of mothers who have received no premedication or delivery anesthesia is 98.1 per cent. With only nitrous oxide and/or ether, this rate is brought down to 80 per cent. With the addition of nembutal and scopolamine as premedication, the rate is cut to 63 per cent. By using pantopon and scopolamine, the rate is 33 per cent.

We seldom see morphine being used at the present, but it should be noted that the narcotization of an infant occurs within 30 minutes of the time of maternal ingestion and the effect lasts about 4 hours. Obviously resuscitation of an infant so narcotized would be a grave problem. On the other hand, scopolamine and nembutal in combination are very frequently used, so it might be interesting to know what effects these drugs have on the baby. According to Wolpe and Birnberg,¹ in the case of scopolamine, a cumulative depression of the respiratory center will occur if more than a total of 1/50 grain is given within 24 hours preceding birth. Nembutal is capable of producing severe fetal asphyxia with a dose as small as 1½ grains 4 to 6 hours before delivery. The effects on the fetus begin within 30 to 45 minutes, reaching a peak in 2 hours, remaining at this stage for another 2 hours, then disappearing within 6 to 8 hours after maternal ingestion.

In a limited discussion of this kind, the subject of anesthesia cannot be dealt with properly, but it should be borne in mind that

8. Smith, C. A.: *Effects of Birth Processes and Obstetric Procedures upon the Newborn Infant*, in *Advances in Pediatrics*, Vol. 3, New York, 1948, Interscience Publishers, Inc.

the most dangerous anesthetics as far as the infant is concerned are the ones with which the oxygen content must be reduced in order to produce the desired depth, and that spinal and caudal types seem to be fairly safe for the infant.

Smith summarizes the problem of anesthesia thus:⁸

1. Drugs for the relief of pain in labor which conserve maternal strength and increase opportunities for obstetric resourcefulness offer a degree of safety to the infant which outweighs their dangers.

2. This safety factor does not exist for the premature.

3. Medications of rapid and brief action will be safer than slow ones with cumulative possibilities; volatile anesthetics are breathed off faster by the mother and the fetus.

4. A moderately narcotized infant is more easily brought into good respiratory status than one with anoxic damage to the nervous system.

Method of delivery also enters into the problem. It is clearly shown that vertex presentations result in much less asphyxia than some of the others. The greatest offenders are version and extraction and cesarean section. Of course, these methods must be used of necessity occasionally but their effects on the fetus should be anticipated. As mentioned above, babies delivered by cesarean section are much more often asphyxiated than would be expected. Russ⁵ offers an explanation for this in that the cord is usually cut as soon as the head is delivered, the mother often is undergoing a section because of some heart, kidney, or respiratory condition, anemia, or diabetes; also the section is often done under deep surgical anesthesia, and sometimes the mother has been in labor for several hours, thus enhancing cerebral damage.

DIAGNOSIS OF ASPHYXIA

So far we have discussed the whys and wherefores of asphyxia, so now a few words might be said regarding how we may recognize this condition in the infant.

According to Clifford,³ anoxia may occur days or weeks prior to birth, in a frequency of 6 in 1000. A diagnosis may be made by golden yellow amniotic fluid and yellow

staining of the infant's skin and nails. It is usually due to placental disease and the mortality rate is around 12 per cent. This type of intrauterine anoxia includes erythroblastosis, and the management of these cases, as we know, is very difficult.

During labor, and particularly during the second stage, anoxia can be diagnosed by the change in the fetal heart tones. Occasionally the heart tones are slightly increased at first, but when there is a drop in rate to below 112, the child usually is suffering from profound anoxia. This sign is ominous, especially if there is a persistent slowing in the second stage after there is increased pressure on the descending vertex. The passage of meconium from the fetus is a sign of anoxia, but rarely can this be determined in utero.

After delivery, the diagnosis of asphyxia can be made usually by just observing the infant. Flagg⁹ classifies asphyxia as mild, moderate, or severe. In the mild type there is no breath within 30 seconds of the birth of the head, the muscle tone is good, the infant resists movements of the head and limbs, the conjunctival and gag reflexes are present, and the heart is normal or rapid. The moderate type is characterized by poor or absent muscle tone, no mouth resistance, and rapid heart which soon begins to slow. In the severe type, which is "asphyxia pallida" in the older classification, the child is limp, pale, and has no muscular movement, no reflexes, a very slow and irregular heart which can hardly be palpated, and, if he takes a breath at all, it is a paroxysmal jerk in which only the external intercostals and diaphragm work by reflex, which is the most primitive neurorespiratory mechanism and the last breathing component to survive.⁸ Usually treatment of this stage of asphyxia is ineffectual.

PRINCIPLES OF RESUSCITATION

Thus it is evident that asphyxia must be treated early. Before birth, when the slowing of the fetal heart tone is noted, the diagnosis of anoxia should be apparent and an investigation should be made of the probable content of oxygen in the maternal blood. If anesthetics are being administered, they should be stopped and 100 per

9. Flagg, P. J.: Treatment of Postnatal Asphyxia, *Am. J. Obst. & Gynec.* 21: 537, 1931.

cent oxygen should be given by inhalation. If this does not correct the fetal anoxia in a few seconds, delivery should be hastened as much as possible.⁸ Many physicians routinely give 100 per cent oxygen to the mother during the latter part of the second stage.

Immediately after birth there is an excellent opportunity to help prevent anoxia. The umbilical cord should be allowed to pulsate as long as it will before being cut. This will allow the infant to receive about 80 to 200 cc. of his own blood comprising 25 to 30 per cent of his total oxygen.

From the time of birth on, gentleness is one of the most important factors in resuscitation. It is permissible to lower the head, thus favoring the drainage of mucus from the mouth and trachea, except in the cases of suspected intracranial hemorrhage,⁷ but, as soon as possible after the cord is cut, the infant should be transferred to a heated crib or incubator for other procedures which might be indicated, or, in the absence of these, a previously warmed blanket might be used to wrap around the infant.

By this time, the diagnosis of asphyxia will be evident and resuscitative measures should be considered. On the basis of an understanding of the causes of asphyxia, the physiology and effects of anoxia, and the degree of asphyxia, it is evident that attention must be centered on four procedures. These are: (a) the establishment of a free airway, (b) the supply of the indicated gas or mixture to correct a deficit of the blood and respiratory center, (c) the establishment of movement of these gases, and (4) stimulation of the respiratory center.

(a) The establishment of a free airway:

As mentioned earlier, the infant is likely to have an accumulation of mucus or amniotic fluid in the respiratory tree, thus preventing a free airway. Most investigators agree that a little of this material which might be aspirated into the lungs will be absorbed, and that, if only an airway can be established, the little remaining in the lung will be relatively harmless. In order to remove the material from the mouth, pharynx, and trachea, the child should be placed in a position so that gravity will help, then the mouth and pharynx should be cleaned with a soft rubber bulb suction or

a 12 or 14 French rubber catheter to which suction is applied. Flagg¹⁰ suggests that in moderate and severe asphyxia there is often actual obstruction in many cases due to relaxed tongue, soft palate, faucial pillars, epiglottis, and arytenoids. In these cases he advises that a tracheal catheter be inserted into the trachea and the material aspirated. He has devised a special laryngoscope for infants so that the procedure may be done under direct vision. Others feel that this may often be dangerous because of the need for special skill in the use of this laryngoscope which is often lacking. Many recommend passage of the intratracheal catheter by the indirect method of putting the finger in the mouth over the esophagus and guiding the catheter into the larynx with this finger. There seems to be no concensus of opinion on the method of choice, and there are likewise those who feel that this type of instrumentation is potentially too dangerous for the usually hurried circumstances.⁸ Of course there is no reason to pass a catheter into an infant who is moving his head around and who closes his gums on the finger of the examiner, because he is not likely to have an obstruction due to hypotonicity.

It might be mentioned here that some writers⁶ feel that antibiotics are indicated prophylactically in infants who have aspirated a large amount of vernix, amniotic fluid, blood, etc., because not infrequently asphyxial symptoms might occur several days later due to the formation of a vernix membrane in the lungs, with secondary infection.

(b) The supply of the indicated gas or mixture to correct the deficit of the blood and respiratory center:

As discussed above, anoxia is the prime consideration in apnea of the newborn. It has been shown that the oxygen content is low and the carbon dioxide content is high. It is therefore evident that oxygen is what the infant needs, and this should be supplied throughout all resuscitative procedures. There is some disagreement in the literature as to whether carbon dioxide also might be

10. Flagg, P. J.: *Asphyxia Neonatorum. The Pivot Upon Which Turns the Movement to Prevent Asphyxial Death*, Surg., Gynec., & Obst. 67: 153, 1938.

indicated. As is well known, carbon dioxide is a stimulant for the respiratory center and might be expected to be beneficial. Under normal conditions this would be true and, if carbon dioxide were given, the response would be immediate, but in this condition these centers are damaged by anoxia, usually narcosis of analgesics and anesthetics, and by the effect of an already increased carbon dioxide tension. Eastman, Dunn, and Kreiselman¹¹ placed dogs in conditions of apnea and gave mixtures of carbon dioxide with oxygen, in contrast to 100 per cent oxygen, and found that they responded more quickly to 100 per cent oxygen. There is a suggestion that oxygen and helium mixtures might be of value but this has not been definitely established.¹²

Oxygen may be given by catheter, hose, cone, or tent, but it should be borne in mind that the stream of oxygen coming from a cone is very cool and can chill the infant in a short while. It should also be noted that in giving gases to an infant, the lower jaw should not be depressed because that produces an artificial respiratory obstruction.¹³ Some authors¹⁴ recommend a few whiffs of spirits of ammonia after breathing has begun but still is shallow.

After the child has begun to breathe fairly regularly, there is no contraindication to giving 5 to 7 per cent mixtures of carbon dioxide and oxygen intermittently. Some feel that this strengthens respiration by stimulation of the respiratory center and also may prevent secondary attacks of cyanosis which sometime occur.¹⁵

(c) The establishment of movement of gases:

If the infant is completely apneic, external pressure will be required in some form

in order to move the oxygen to the lungs. It has been found that it takes a pressure of around 30 cm. of water to overcome the cohesion of the alveolar walls and thus expand them initially, and it is believed that the diaphragm and intercostals can stand a pressure up to 40 cm. water. There have been many devices and methods devised to supply this pressure. Only a few will be mentioned.

By mouth-to-mouth breathing, air can be forced into the infant's lungs, and this method is fairly successful, as long as it is remembered that the alveolar walls cannot stand great pressures. In the absence of any other means this is probably the method of choice. There are many variations of this method, such as a special mask to fit the baby's face and a tube to blow through, with a safety valve to prevent over 30 cm. water pressure.

Flagg¹⁰ and other investigators recommend that the intratracheal catheter be used to provide a stream of oxygen into the lungs. This has been successful in many cases in the hands of trained operators.

Various masks connected to tanks of the desired gas have been devised, including the E. and J. resuscitator, which applies a positive pressure of 13 mm. mercury of oxygen and then a negative pressure of 9.75 mm. mercury.¹⁶ Many feel, however, that negative pressure should not be applied since it reestablishes the cohesion of the alveolar walls and thus accomplishes nothing.

The Drinkler resuscitator makes use of negative pressure on the chest wall much like an iron lung, and this has been successfully reported but involves a complicated apparatus when seconds count.

Artificial respiration by pressure on the chest wall is of no value in an infant who has not taken a breath because obviously the alveoli are already collapsed, and when the hands are removed there is not nearly enough recoil action of the chest wall to overcome this cohesion.

Mechanical resuscitation of some sort should be carried out at a rate of 20 to 30 times a minute until the infant is making

11. Eastman, N. J.; Dunn, R. B., and Kreiselman, J.: Relative Value of Pure Oxygen and of Carbon Dioxide Mixtures in Experimental Resuscitation, *Am. J. Obst. & Gynec.* 36: 571, 1938.

12. Kane, H. A.: Use of Helium and Oxygen in the Treatment of Asphyxia Neonatorum, *Am. J. Obst. & Gynec.* 40: 140, 1940.

13. Sullivan, C. L.: Anoxia Neonatorum, *New England J. Med.* 235: 894, 1946.

14. Grulee, C. G., and Sanford, H. N.: The Newborn, in Brennemann, J.: *Practice of Pediatrics*, Hagerstown, Md., W. F. Prior Company, Inc., 1945, vol. I, chap. 42, p. 39.

15. Portes, Cot, and Mayer: Carbogen Therapy in Treatment of Asphyxia of the Newborn, *Bulletin de la Societe' de Gynecologie et d'Obstetrique*, 27: 123, 1938.

16. Martinez, D. B.: The Mechanical Resuscitation of the Newborn, *J. A. M. A.* 109: 489, 1937.

regular and fairly deep respiratory movements. If this does not occur in an hour, conditions such as intracranial hemorrhage, foreign matter in the lungs, congenital anomalies, or severed spinal cord should be considered.

(d) Stimulation of the respiratory center:

A mildly asphyxiated infant may frequently be stimulated to breathe by gentle patting or rubbing the skin, or flicking a few drops of cold water into his face.

In the case of a moderately or severely apneic child, one should never plunge him in a pan of cold water; he is already in or on the verge of shock and application of cold violates every principle in the treatment of shock and in the treatment of the newborn. It is permissible to put the baby up to the neck in warm water but this is seldom indicated, because an incubator, crib, or warm blanket is usually available.

Unfortunately, there are no drugs available which will initiate breathing of an asphyxiated baby. Clifford³ feels that 3 mgm. of alpha Lobeline might possibly be of some help because occasionally, when injected into the umbilical vein, it causes a convulsive gasp which might possibly cause an intake of oxygen to help correct the existing anoxia.

The drugs which act as direct stimulants to the medullary centers or aortic and carotid body chemoreceptors are alpha Lobeline, Coramine and Metrazol. There are other drugs which are milder stimulants and are not specific respiratory stimulants. These include caffeine and epinephrine. It is useless to give any of these drugs to an infant who has not taken a breath, in hopes of stimulating the medullary centers, because the centers upon which they act are already damaged from anoxia and cannot respond. If they could respond, they would be doing so already because of the high carbon dioxide tension.

After respirations have started and the anoxia has been corrected, some stimulation from these drugs might be helpful in maintaining regular respirations. Caffeine or epinephrine may be helpful by bringing more blood and thus more oxygen to the critically afflicted medulla.

By a combination of the four principles which have now been discussed, it is pos-

sible to resuscitate some of the infants effectively, with a feeling that the condition of the infant is understood, and that a logical approach to the existing situation is possible. Of course, there are many severely asphyxiated infants who will not be saved by these methods, but it is felt that they are probably the soundest, and, if they fail, the more radical and unscientific methods will likewise be of no value.

SUMMARY

1. The need for an understanding of the principles of resuscitation is demonstrated by the fact that anoxia is concerned in 60 per cent of all deaths among premature and full term infants.

2. The antenatal, natal, and postnatal causes of apnea in the newborn are considered, showing that anoxia is the chief factor to be dealt with.

3. The physiology of anoxia is presented, indicating that there is an acidosis with high carbon dioxide content. The end results of anoxia are congestion, edema, hemorrhage, and finally death of tissue.

4. The role in the production of apnea played by analgesics and anesthetics is discussed. The dangers of Nembutal and scopolamine are brought out. It is pointed out that asphyxia in babies born by cesarean section is more frequent than would be expected.

5. The signs heralding the presence of asphyxia are presented. A description of the three degrees of asphyxia in the newborn are given.

6. The value of oxygen to the mother during delivery is stressed in the prevention of fetal asphyxia. Delaying tying the cord until pulsations have stopped is mentioned.

7. The four principles of resuscitation are enumerated and discussed. These are: establishment of an airway, supply of the proper gas to the baby, movement of these gases to the lungs, and stimulation of the respiratory center.

A sanatorium must not be regarded as just a place where the patient has a bed and a tray and a nurse and a physician. A sanatorium, if it serves its purpose, is in the first place an atmosphere in which each patient is leading the kind of life he must lead for cure of tuberculosis.—Hayes, *California Med.*, Dec. '50.

LUNG ABSCESS

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A lung abscess is a localized collection of pus in a cavity formed by the disintegration of lung tissue. Such abscesses may be either acute or chronic and may vary in size from small circumscribed lesions to large single or multiple lesions involving the greater part of the pulmonary tissue.

ETIOLOGY

Most lung abscesses are a result of bronchial obstruction; that is, obstruction plus infection. If there has been infection in the lung distal to the point of obstruction, as, for instance, interstitial pneumonitis, the impaired drainage causes a greater degree of infection and more breakdown of the tissue. If the area distal to the blocked bronchus has been previously uninfected, it will rapidly become infected, as occurs with an obstruction in other organs such as the gall-bladder or urinary bladder.

One of the common causes of bronchial obstruction is the aspiration of foreign material, usually infected or contaminated. This may occur postoperatively, and the aspirated material may be blood clots after operations on the nose or throat, or it may be vomitus in the postoperative period of any operation. During sleep the cough reflex is dulled, and infected bits of material from poor oral hygiene may be aspirated. This is especially true if sleep has been deepened by alcohol and drugs. When the cough reflex has been inhibited, even small particles of foreign material may obstruct a small air passage and set the stage for infections to occur. There is a possibility of the aspiration of food material, especially in children, but also in adults who have impaired swallowing. Persons who regurgitate regularly because of cardiospasm or stricture of the esophagus rather frequently develop lung abscesses. Aspirated food is usually quite irritating and may set up considerable bronchial reaction. Inert foreign bodies may also obstruct a bronchus and produce a lung abscess simply because of the impaired drainage.

Obstruction, of course, may be produced by a neoplasm either benign or malignant

and one must always consider the possibility of carcinoma in dealing with an abscess in a cancer age patient. A tumor may obstruct a bronchus directly by growing into the lumen or by pressure from without. It is likewise possible that enlarged lymph nodes, mediastinal tumors, aneurysms and the like may produce sufficient bronchial obstruction to cause a distal infection to occur.

Interstitial pneumonitis may become a lung abscess if there is sufficient bronchitis associated with the lesion that bronchial edema causes impairment of drainage through the bronchus. Ordinarily, an interstitial pneumonitis with the infection in the interstitial planes of the lung breaks out into the intervening bronchioles and the sputum is readily coughed up. If the draining bronchioles are blocked, pus continues to form under sufficient pressure to cause obliteration of the vascular bed and necrosis takes place.

Other etiologic factors in the development of lung abscesses are: (1) septic emboli from a thrombophlebitis; (2) penetrating wounds of the lung; and (3) bronchial obstruction by strictures due to previous trauma and infection.

It is well to remember that a carcinoma in the periphery of the lung may outgrow its blood supply, become necrotic in its center, and thus become a "lung abscess."

PATHOLOGY

The pathology of lung abscesses is essentially the same as abscesses elsewhere in the body, with some special features due to the special anatomy of the lung. The right lung is affected more than the left, and in either case the lower lobes more often than the upper. The predilection for the right lung and the lower lobe is due to the fact that most lung abscesses are probably due to the aspiration of infectious material and foreign bodies from the upper respiratory passages. The right main bronchus being more nearly a straight continuation of the trachea makes the right lower lobe more accessible to foreign material than other portions of the lung.

The arrangement of the arterial and lymph supply of the lung makes for special features in a lung abscess. The arteries are endarteries and there are almost no anastomoses in the periphery. The lymph drainage from the lung is both centrally to the hilar nodes and peripherally to a subpleural network of lymphatic vessels. In abscesses there is first an area of pneumonitis with consolidation. This is followed by necrosis and liquefaction. At about the time of beginning necrosis, the blood vessels in the area become thrombosed. Lymph vessels pick up bacteria and drain both centrally and peripherally. These factors are two of the essential points in the pathology of lung abscesses. When the vessels in an area of a beginning abscess become thrombosed, there is produced a deficient blood supply to the lobe and pleura peripheral to the abscess. This causes the abscess to "point" in the direction of the periphery and produces a pleuritis, aided by the peripheral lymphatic drainage. This pleuritis causes pain and adhesions which will produce obliteration of the pleural space overlying the abscess.

After liquefaction the necrotic material may be freed by rupture of the abscess wall into a bronchus. If the drainage is adequate, the abscess may heal spontaneously in this way. In most instances, however, drainage by way of a bronchus is inadequate because of edema of the bronchial mucosa, the presence of a foreign body, granulation tissue, or pressure on the bronchus by surrounding enlarged lymph nodes, and other measures to secure drainage must be instituted.

If the abscess is recent, its wall is composed of necrotic lung tissue surrounded by edematous, hyperemic lung. As an abscess becomes chronic, the wall becomes one of fibrous tissue and the cavity may be partially lined with epithelium that has grown in from the draining bronchus. Such a rigid walled pocket of infection cannot spontaneously heal.

DIAGNOSIS

Acute lung abscesses should be considered in any case presenting respiratory symptoms, particularly if there has been any recent operation or narcosis, and in cases of pneumonia that fail to resolve normally. In lung abscesses, one of the early symptoms is localized pain in the chest. This is produced

by the localized pleuritis previously described and may be of distinct value in localizing the pathology. Fever is usually present and frequently is of the septic type with chills. Cough is common and may or may not be productive, depending upon the connection with a bronchus. If the abscess is poorly drained, the sputum will be less and the fever higher. The sputum may or may not be foul in the beginning, but usually has an extremely bad odor at some time during the course of the disease, when anaerobes are present in the pus to a large degree. Leukocytosis is present with the shift of the differential count to the left. Hemoptysis may occur but is less common in an acute than in a chronic abscess. A secondary type of anemia occurs very early in the course of the disease and is soon followed by hypoproteinemia.

In a chronic lung abscess the symptoms are merely less acute and the systemic manifestations are less or may be absent. There may be exacerbations of fever and malaise. Sputum is usually copious and foul. Large hemorrhages are common and secondary anemia is almost always present. Clubbing of the fingers and toes occurs in almost all long standing cases.

The physical findings in lung abscesses are unreliable but one may find rales, a pleural rub, evidence of consolidation, or amphoric breathing over a cavity. Absence of abnormal physical findings will not rule out a lung abscess, however.

X-ray examination is the chief aid in the diagnosis and should be used in every case suspected of having an abscess regardless of the physical findings present. The x-ray may show cavitation, usually round, with areas of increased density surrounding, or may simply show a density if the cavity is not evacuated. Bucky films will frequently show cavitation in the latter cases. X-ray by posterior-anterior and lateral views is also invaluable in localizing the abscess. A thick irregular wall to the cavity is very suggestive of a malignancy which has formed a necrotic abscess.

Bronchoscopy should be used in the study of all cases, and is of value in locating the bronchus draining the abscess and reveals the presence of a foreign body or other obstruction such as tumor. Not only does

bronchoscopy aid in making an accurate diagnosis but helps plan an appropriate form of therapy as well. Sputum taken directly from the involved area can be studied for tumor cells, acid fast bacilli and the predominant pyogens.

In making the diagnosis of lung abscess one must consider not only malignancy of the lung but tuberculosis and, in North Alabama particularly, histoplasmosis as differential possibilities. Histoplasmosis will rarely cause confusion because of the gradual onset of symptoms, the milder systemic manifestations and the absence of foul sputum. Tuberculosis presents more of a problem, particularly when considering the possibility of a chronic abscess. If there is any doubt whatever, multiple sputum examinations should be run and the patient's sensitivity to tuberculin determined. Almost all lung abscesses should be checked with a Volmer patch test, and, if there is any appreciable degree of positive reaction, special effort should be made in examining the sputum. The examination of the sputum for acid fast bacilli will be of most value after instituting medical management of the lung abscess for a few days in order to at least partially overcome the pyogenic infection. The location of the cavity on an x-ray film will not differentiate tuberculosis from pyogenic abscesses. Either condition may be at the extreme apex or just above the diaphragm.

Needle aspiration of a lung abscess through the chest wall is dangerous. This can be done with impunity only if the pleural surfaces are firmly adhered to each other. However, we have no way of knowing this without exposing the pleura at surgery, and to aspirate a lung across a free pleural space is to invite disastrous complications. The first of these complications is an extremely virulent empyema which can easily produce an overwhelming toxicity to the patient and result in death within forty-eight hours. The second is the development of a bronchopleural fistula along the needle tract which becomes infected, making it extremely difficult to expand the lung after the resulting empyema is drained, provided the patient survives. An empyema will effectively prevent any thought of resection of the lobe with an abscess in it until several weeks or months have passed following the drainage

of the empyema. In brief, the information to be gained is not important enough to justify the hazards of the procedure of aspiration of a lung abscess through the chest wall.

TREATMENT

A trial of non-surgical drainage, supplemented by antibiotics and supportive measures, is indicated in the patient who has just been seen and diagnosed. About forty per cent of lung abscesses will respond to a non-surgical routine if it is faithfully carried out. A patient with an acute lung abscess should be put to bed, and given a diet high in proteins, vitamins and calories. Frequent small, whole blood transfusions are of value even if there is no lowering of the red blood count.

Bronchial drainage is the essence of non-surgical management and must be pursued as vigorously as possible. All patients should have a continuous, passive type of bronchial drainage produced by the elevation of the foot of the bed twenty inches. Except those who are extremely debilitated, the patient should supplement the passive drainage by active drainage over the side of the bed for two minutes at a time with forced coughing. This active drainage routine over the side of the bed should be done as often as every two hours while the patient is awake. This is important as pus forms rapidly and occasional drainage is inadequate to keep the abscess empty. Unless it is kept empty, healing will not occur. Bronchoscopic aspiration, with shrinking of edematous mucous membranes, should be used as a supplement if it seems to help. Expectorants, such as ammonium chloride and potassium iodide, should be used but are of no value unless a high fluid intake is maintained. These patients must not only be encouraged to drink copious amounts of water but must be made to realize that a fluid intake of at least 2000 cc. per day, in addition to that taken with meals, is an essential point of the treatment. Cough sedatives are not to be used as they thicken the pus, make it difficult to raise, and actually create bronchial blockage. Sedatives for pain must be judiciously used also, particularly the opiates, as they thicken the pus and can create bronchial blockage.

The use of drugs in the treatment of lung abscesses was of little value until penicillin

became available. Even with the advent of streptomycin, aureomycin and the like, penicillin is still the standby as far as chemotherapy is concerned. The use of sulfonamides is not worth while and the incidence of renal complications is high. Arsenicals are of no help except to aid in reducing the odor of a particularly offensive sputum. In such cases 0.45 grams of neoarsphenamine once or twice at weekly intervals helps somewhat. Penicillin should be given parenterally in large doses. In patients who are very sick, we prefer to use crystalline penicillin in the dosage of 50,000 to 100,000 units intramuscularly every three hours. In less severe cases a single daily dose of 400,000 units of one of the long acting penicillin preparations is satisfactory. Aerosol penicillin in the dose of 50,000 units three times a day is of help. In cases of poor drainage due to granulation or edema, the addition of 1 cc. of 1:100 solution of epinephrine hydrochloride to each aerosol inhalation helps greatly. In some cases, study of the flora in the sputum will reveal greater sensitivity to a chemotherapeutic agent other than penicillin. In such cases the appropriate drug is used.

The non-surgical measures should be continued as long as the patient continues to improve both clinically and by x-ray examinations. It is important to stress the latter, for most patients will improve clinically rather promptly on the routine described. However, such may not be the case within the lung itself. Lung abscess patients should be followed by weekly chest x-rays. If one x-ray of the chest fails to show improvement when compared to the film of the previous week, non-operative measures should be supplemented by surgical drainage or excision. Once improvement on a medical routine has ceased, it is useless to continue in the hope that eventually penicillin and faith will effect a cure. For non-surgical therapy to be successful, the lesion seen on the x-ray must improve to the point of total resolution. If a residual density persists on the x-ray film, the patient is a candidate for further trouble no matter how satisfactory his clinical response has been up to that time. Failure of the abscess to resolve completely means that there is a residual cavity filled with inspissated, rubbery pus. This cannot be evacuated through a bronchus and

the abscess will not heal until surgically attacked. Prolongation of non-surgical measures after they have ceased to produce improvement increases the risk of rather severe complications. These complications may be: (1) massive or even fatal hemorrhage; (2) spread to other portions of the lung; (3) distant metastatic abscesses, such as to the brain; (4) development of stubborn chronic abscesses with surrounding bronchiectasis that will require more radical surgery; (5) development of empyema with or without broncho-pleuro-cutaneous fistula; and (6) the late development of amyloidosis.

As a primary surgical procedure there is a choice between open drainage and resection. Drainage, if done, should be done as a one-stage procedure when possible and almost always can be done as such if the abscess is well localized. Before proceeding with surgery, the abscess is properly localized by anterior-posterior and lateral x-rays. Open drainage should be done under local novocain infiltration so that the patient will be able to cough and raise sputum if the abscess should suddenly drain profusely into a bronchus. If the abscess has been properly localized, an adherent pleura will be encountered in most cases when short sections of two or three ribs have been removed. The lung is explored through the adherent pleura with an aspirating needle until the abscess cavity is located. It is then opened widely and packed with a gauze roll. It is necessary to make what seems an excessively large external wound because the soft tissue will fill in more rapidly than the abscess cavity. The packing is then changed daily until the cavity is healed.

If, at the time of the proposed drainage, a free pleural space is noted, one must do nothing further except to pack the wound down to the pleura. Any attempt to drain the abscess at this time will almost certainly result in an empyema. After seven to fourteen days, the pleura will be adherent beneath the pack and at a second stage drainage of the abscess may be safely done.

If there is history of long standing productive cough before the onset of the abscess, or if the abscess has been present any appreciable time, bronchograms are usually indicated before any surgery is done. One

would not do well to do open drainage on an abscess surrounded by extensive bronchiectasis. The chief cause for a persistent fistula after drainage is the presence of associated bronchiectasis.

Open drainage is probably the treatment of choice in a single, relatively small, peripherally placed abscess in which most of the lung parenchyma is not damaged. In cases where there is involvement by multiple abscesses or bronchiectasis, resection of the involved areas, whether they be lung or lobe, should be done. Lobectomy is being used at present for the treatment of many single abscesses that were formerly treated by drainage. The present low mortality of lobectomy, the lessened morbidity in resection as compared to drainage, and the constant danger of massive hemorrhage when open drainage has been used make resection more tempting. Lobectomy should be of the individual ligation technique, and special care must be taken to assure a prompt and complete expansion of the remaining lobe or lobes. In skilled hands the mortality should not be more than three per cent and compares favorably with the mortality of open drainage. Lobectomy has the obvious advantage of having the patient out of the hospital in as little as two weeks, whereas with drainage the patient usually requires care for many weeks. In addition, until a drained abscess is completely healed there is great danger of severe and even fatal hemorrhage. Without question, resection should be used for multiple abscesses involving most of the lobe or if there is associated bronchiectasis. These patients, if drained, remain chronic invalids with bronchocutaneous fistulae for long periods.

It is occasionally necessary to resort to lobectomy after open drainage has been done. At times, in chronic abscesses, the wall has become so thick that it will not collapse and heal after drainage. Muscle flap transplants and thoracoplasty have been used in such cases but lobectomy is a much more satisfactory method of treatment. It is a much more difficult operation than a primary resection but can be done quite safely.

COMPLICATIONS

Lung abscess is a potentially fatal disease. Its relatively low mortality rate at the pres-

ent time is found only in those hospitals and clinics where they are treated with the utmost respect and intensive care. Approximately forty to fifty per cent of lung abscesses can be cured by the conservative outline of therapy. If surgical intervention is not used, the remaining fifty to sixty per cent will either die or become thoroughly chronic even to the point of having repeated exacerbations over a period of many years. Complications of a metastatic infection in the brain, liver, spleen or other organs are always a potential hazard in lung abscess. This is particularly true in this condition because there is ample opportunity for the infected thrombi to enter the pulmonary venous circulation. It is thought that the unusually high incidence of brain abscesses associated with pulmonary suppuration is due to the fact that particulate matter discharged into the aorta naturally follows the external arch from which it can easily take off through either of the carotid arteries. Hemoptysis is a common complication of lung abscess in spite of the fact that in the area immediately surrounding the abscess most of the smaller vessels become thrombosed and obliterated. When infection causes tissue destruction at a more rapid rate than thrombosis of the vessels can occur, the erosion will interrupt a vessel and produce a hemoptysis of anything from a few cubic centimeters to a litre or more. Occasionally lung abscesses will rupture spontaneously into the pleural cavity and produce a violent and virulent empyema as the pleural cavity is being flooded with infection. This causes a very acute and stormy episode and demands immediate drainage. Even when the patient survives the course becomes long and protracted. A broncho-pleural fistula once established makes expansion of the lung extremely difficult. However, in certain instances the rupture of a lung abscess into the pleural cavity and drainage of the pleural cavity itself has resulted in a spontaneous cure of the abscess. A widespread bronchiectasis may develop and the late but severe factor of amyloidosis can be expected.

SUMMARY

To summarize, lung abscesses most frequently follow bronchial obstruction and may occur after any general anesthesia or other condition in which the natural re-

flexes are dulled. Other important causes are the aspiration of foreign bodies under other conditions and obstruction of a bronchus by a neoplasm. The pathology is essentially that of any abscess with an associated obliterative pleuritis overlying the abscess. The diagnosis is made by suspecting the condition in any case showing respiratory symptoms, particularly after anesthesia or narcosis, and is confirmed by x-ray and bronchoscopic evidence. Medical treatment should be tried first and consists of bed rest, good diet, transfusions, postural

and bronchoscopic drainage, and large doses of penicillin by parenteral and aerosol routes. Medical therapy should be continued as long as the patient definitely improves. Improvement that will occur will be prompt and steady. Surgery should not be delayed too long because of the danger of serious complications that may occur. Surgery may be either drainage or resection and there is a high percentage of cases in which primary resection is the treatment of choice.

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ABDOMINAL ACTINOMYCOSIS WITH PULMONARY INVOLVEMENT

REPORT OF A CASE

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Abdominal actinomycosis, bovis type, carried a high mortality until the introduction of the bacteriostatic agents, such as penicillin and sulfa, and the recognition of the value derived from supplying the necessary body proteins, through blood transfusions and a high protein diet, to combat the inanition associated with actinomycosis and other chronic debilitating diseases.

The reported case reflects the clinical picture most frequently seen in these cases, the difficulty of diagnosis, the chronicity of the disease, and its damaging effect upon the body tissues, both locally and on a nutritional state, and also the newer concept of the clinical management.

CASE REPORT

M. H. H., a 15-year-old white male, living in a small North Alabama community, was in apparent normal health until September 1, 1942, when he was stricken in the early morning with an acute abdominal pain, colicky in type and confined chiefly to the lower abdomen. Vomiting ensued shortly thereafter. The pain and vomiting continued until the late afternoon of the same day, at which time his family physician was

called. The patient was treated expectantly for a period of four or five days in the home, during which time the soreness became localized near or about the umbilicus, accompanied by vomiting, pain and distention of the abdomen.

He was transferred to a local hospital and in consultation with other physicians a diagnosis was made of an abdominal abscess in proximity to and to the left of the umbilicus. Under local anesthesia, the abscess was drained, evacuating a large amount of pus. Following drainage of the abscess, the abdominal distention and vomiting were controlled by decompression of the stomach with nasal tube suction, fluids being supplied by intravenous glucose in saline. Approximately two days later, fecal material was noted draining from the abscess cavity. Such drainage continued for approximately one week, being followed by pus discharging from the wound throughout the hospital stay of 19 days.

On the patient's return to his home, the wound continued to discharge for approximately two months, after which time he resumed school activities. One week after his return to school, he had a recurrence of colicky abdominal pain which continued for several days, when he developed a new ab-

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Fig. 1. Patient at age 17, after more than two years of illness with abdominal actinomycosis, bovis type, showing evidence in face and hands of marked nutritional deficiency. It was at this time (November 1944) that he was referred to one of the authors, D. C. D., for study. Abdominal pathology was one of multiple discharging sinuses involving the lower abdomen and right lumbar region, dating back to onset of illness some two years before.

scess in the midline of the abdomen midway between the umbilicus and the pubis. This time the abscess was drained under local anesthesia and pus drainage continued for about three months, when a third abscess appeared in the left groin in proximity to the inguinal ligament midway between the spine of the ilium and the spine of the pubis. This abscess was drained in the same manner as the two previous ones, and all the sinuses continued active drainage until the midsummer of the following year (1943), when an abscess appeared in the right lumbar region. This abscess was dealt with in a similar manner.

Accompanying these discharging sinuses was a progressive picture of inanition, characterized by loss of weight, loss of appetite and body weakness, until November 1944, at which time the patient was referred to us for study by Dr. T. E. Martin, of Guntersville, Alabama, who had been called into consultation.

On initial examination we found the patient to present a low nutritional picture. A review of systems disclosed that he was essentially free of disease except for the abdomen and chest. The chest findings were compatible with a low-grade bronchitis. The abdominal picture was one of multiple discharging sinuses with induration of the sinus walls about the skin area and superficial tissues involving the four sinus tracts. No abdominal distention was present to suggest peritoneal invasion or irritation.

On laboratory examination the patient was found to have an advanced secondary anemia and normal urinalysis. A study of the secretion from the sinus tracts was made, smears revealing evidence of *Actinomyces bovis* sulphur granules, but cultures showed a negative growth of the actinomyces at this time.

Since the patient was not prepared to stay away from home on this visit, he was next seen approximately two months later (February 1945), at which time a more exhaustive study was made, including a recheck of urine and blood, and smear and culture of the discharging sinuses. The latter revealed



Fig. 2. Flat x-ray of abdomen of patient shown in Fig. 1, made in November 1944, after injection of 10 per cent solution of sodium iodide into sinus tract in proximity to the umbilicus, showing the opaque medium in the right iliac region (cecal and appendix area).

the anaerobic *Actinomyces bovis* (Wolff-Israel). The laboratory examination was confirmed by Dr. Roger Baker, pathologist of the Medical College of Alabama.

At the same time the sinus tract of the right lumbar region was injected with a 10 per cent solution of sodium iodide, and at once the patient was thrown into a paroxysm of coughing, and upon expectoration, the iodide was detected in the sputum. The sinus to the left of the umbilicus was likewise injected, and the iodide was recovered in the rectum. Both regions were x-rayed at the time the injections were made, revealing sinus tracts leading to the right chest and cecum. X-ray of the chest revealed a bronchio-pulmonary fistula, and the abdominal x-ray showed a right colon fistula involving the cecum.

A diagnosis of abdominal actinomycosis, with secondary invasion into the bronchial tree, was made.

The patient was returned to Dr. Martin with the following suggestions: Multiple blood transfusions and a high protein diet to combat the low nutritional state; sulfadiazine (4 gm. a day) by mouth, and peni-

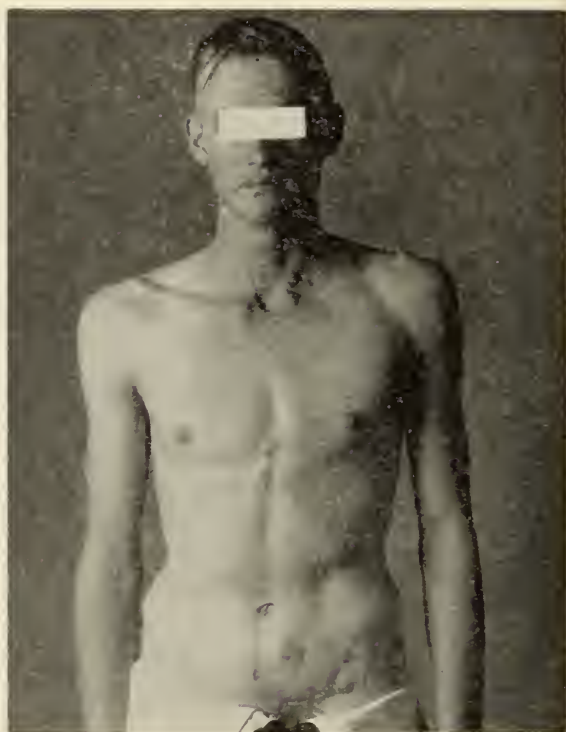


Fig. 4. Photograph of patient made in January 1949, showing the healed abdominal sinuses, the improved nutritional state and normal development at age 21.

cillin (30,000 units every three hours), in addition to local therapy in the form of 10 per cent solution of thymol in olive oil every three or four days injected into the sinus tracts.

This treatment was continued until the patient had had 7,500,000 units of penicillin, sulfadiazine for 10 days, and six blood transfusions of 500 cc. each at weekly intervals.

The patient reported to us subsequently on May 31, 1945, and on Aug. 30, 1945, and on the latter date there was marked improvement in the nutritional picture and also healing of the various sinuses.

On Jan. 6, 1949, five and a half years after the onset of his illness, he was 21 years of age, five feet and 11 inches tall, and weighed 142 pounds, all sinuses being healed and the nutritional state good. He was free of bronchial symptoms. Hemoglobin at this time was 98 per cent, red blood count 4,600,000 cmm., white blood count 7,500 cmm., with a normal differential white count, and urine was negative.

MORPHOLOGY AND PATHOGENESIS

Actinomycosis of the abdomen manifests itself as a graded infection. It is caused by



Fig. 3. Flat x-ray of chest following injection of 10 per cent solution of sodium iodide into sinus tract of the right lumbar region, showing the opaque medium in the bronchial tubes, confirming the bronchial-pulmonary fistula.

an anaerobic streptothrix or fungus (the ray fungus). The three areas of the body in which the disease is most commonly seen in man are: the abdominal, which accounts for approximately 20 per cent of the cases; the thoracic, accounting for some 15 per cent, and the cervicofacial, for about 60 per cent. In the remaining 5 per cent of the cases the infection involves the different body organs or regions of skin, genito-urinary tract, etc.

Actinomyces bovis was not discovered until 1877, when Bollinger¹ and Harz² recognized it upon examination of the diseased jaw (lumpy jaw) of a cow. In 1878 Israel³ identified the disease as actinomycosis in man. Thirteen years later (1891) Wolff and Israel⁴ cultivated the organism anaerobically and explained its characteristics and pathogenesis, and the disease has since been known as actinomycosis (Wolff-Israel). The infection has never been found outside the animal body. It is not to be confused with Madura foot, which is caused by an aerobic species of actinomyces.

Actinomycosis is often unrecognized and for that reason it is considered a rare disease. Discrepancies in the rates of its known prevalence indicate that many cases are not properly investigated or studied. In recent years, as understanding of the disease has become more extensive, more cases have been diagnosed, particularly in certain regions, but knowledge of the infection still lags far behind that of other chronic granulomata.⁵

Formerly it was thought that the disease occurred chiefly among rural inhabitants, because of contacts with diseased animals or with straws, grasses, etc., which harbor



Fig. 5. Posterior view of patient in January 1949, showing healed sinus in the right lumbar region and normal body development, with good nutritional state.

the organism. It was believed that a habit of chewing straws or stalks might cause the infection in man. Analyses of cases by more recent writers, however, have shown actinomycosis to be as prevalent in urban as in rural areas.

Morphologically, *Actinomyces bovis* are gram-positive, branching filamentous organisms.^{6,7} They are not acid-fast, do not form spores, and are non-motile. Their filaments are less than one micron wide. They are found in the lesions or exudate in the form of branched mycelia and appear as small sulphur granules. When the granule is crushed under a cover glass and examined microscopically, two elements of the granules may be distinguished: (1) branching mycelial filaments and (2) club forms. The filaments constitute the greater part of the body of the organism or fungus. About the center of the fungus these filaments ap-

1. Bollinger, O.: Ueber eine neue Pilzkrankheit beim Rinde, Centralb. f. d. med. Wissensch., Berl. 15: 481, 1877.

2. Harz: *Actinomyces bovis*, ein neuer Schimmel in dem Gewebe des Rindes, Jahresber. d. konigl. Central-Thierarzneischule zu Munchen, 1877 (cited by Cope).

3. Israel, J.: Neue Beobachtungen auf dem Gebiete der Mykosen des Menschen, Arch. f. path. Anat., Berl. 74: 15-53, 1878.

4. Wolff, M., and Israel, J.: Ueber Reincultur des *Actinomyces* und seine Uebertragbarkeit auf Thiere, Virchow's Arch. f. path. Anat. (etc.), Berl. 125: 11-59, 1891.

5. Morton, H. S.: Actinomycosis, Canad. M. A. J. 42: 231-236, 1940.

6. Dubois, Rene J.: Bacterial and Mycotic Infections of Man, Philadelphia, 1948, J. B. Lippincott.

7. Baker, Roger, et al.: Manual of Clinical Mycology, Philadelphia, 1944, W. B. Saunders Company.

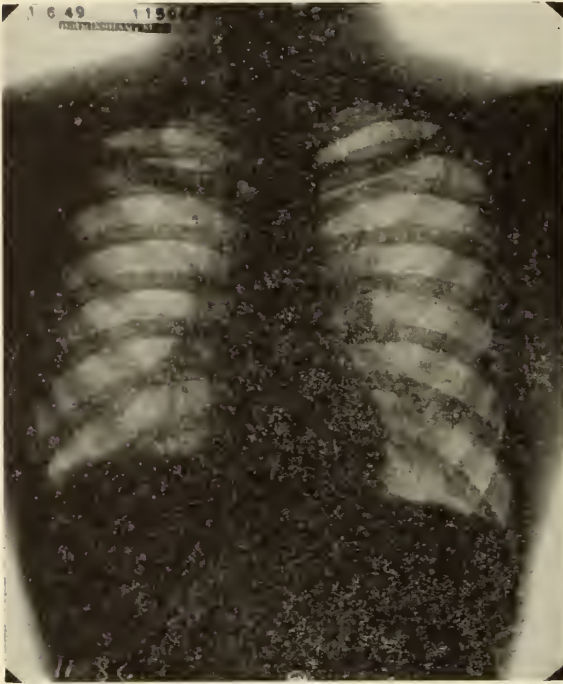


Fig. 6. Flat x-ray of chest, made in January 1949, showing no evidence of previous bronchial-pulmonary fistula.

pear as a dense felted mass. The clubs are pear-shaped bodies which form a fringe around the periphery of the colony. Boyd,⁸ commenting on the fringe protection of the club, states that this may be a means of defense against the antibodies or protecting forces of the body tissues.

The ray fungus apparently flourishes in hollow places of the body, such as pockets around the teeth associated with infection following extraction, the salivary glands, the crypts of the tonsils, and the gastrointestinal tract where stagnation is present, as in the appendix and cecum.

The fungus usually enters the body by the oral route, chiefly through the ingestion of food. In the mouth the organism passes through the mucous membrane, most often as a result of trauma, which frequently follows extraction of a tooth with an infection (gingivitis). Such an infection provides a fertile field for actinomyces to develop and to gain entrance into the body tissues. Other ways in which the organism enters the body are by aspiration into the lungs, and by direct inoculation into the skin through trauma.

The infection usually extends over a long period of time before the disease is recognized. The behavior of actinomyces on certain body tissues is an outstanding feature of the disease, as it thrives in connective tissues and connective tissue planes of the jaw and neck, submucous, subperitoneal and subpleural spaces. It is seldom spread by the blood stream, and never by the lymphatic system. Muscles are either pushed aside or infiltrated. Nerves may or may not be irritated by the disease. Bones may be superficially eroded by a contiguous focus. Primary bone infection is seen only in the jaw. The skin is always involved sooner or later, but offers a greater resistance than the underlying tissues, for although sinuses develop, they show a tendency to close up before the underlying focus is extinct, and there is seldom much loss of skin leading to the formation of an ulcer. Possibly the preference of the organism for anaerobic conditions may partly account for this. Cope⁹ states that the site in the mucosa of the mouth or the appendix through which the organism enters is seldom discernible. After penetration occurs, the mucous membrane heals rapidly and the disease process works away from its point of entry.

THE CLINICAL FEATURES

Abdominal actinomyces is found most frequently in the appendix and cecal areas, and occasionally in the lower colon, or about the bed of a perforated peptic ulcer. The clinical symptoms in the lower intestinal canal may be of two types:

Acute—The acute type is no different from acute appendicitis, and the operative findings are those for acute appendix. The incision postoperatively may heal completely, only later to form an abscess or, if the site has been drained, a persistent draining sinus may occur. If an abscess occurs, which often simulates a stitch abscess, upon being opened, a multiple sinus tract with small abscesses about the cecum will be encountered and frequently sulphur granules can be seen as dirty yellow streaks.

Chronic—This type has an insidious onset, pain not being a particular feature, but instead a firm, painless swelling becomes

8. Boyd, W.: *Surgical Pathology*, ed. 5, Philadelphia, 1943, W. B. Saunders Company.

9. Cope, V. Z.: *A Clinical Study of Actinomyces with Illustrative Cases*, *Brit. J. Surg.* 3: 35-81, 1915.

noticeable in the right iliac fossa with referred pain to the neighboring muscular structures. The organisms should be readily demonstrated if this is incised.

Due to the chronicity of the disease and its tendency to invade the connective tissues of the abdominal region, long-continued infection develops secondary changes such as graded anemia, loss of weight, and abscesses which may rupture, producing multiple discharging sinuses.

Clinically the disease is often confused with tuberculosis and syphilis, but its method of spreading by means of the connective tissues is a distinguishing differentiation. It is thought that the spread into the surrounding tissues is through the filaments of the organism, although by what means is not known. Spread by the blood stream is rare except for the case where the lesion invades into the blood vessel, which may give rise to metastases to distant organs—the liver, brain or heart. Actinomycotic lesions are similar to those of tuberculosis or syphilis and oftentimes it is difficult to draw a distinction. The granulomas of actinomycosis develop slowly, remaining firm for a long time, but finally softening and breaking down the body tissues. Connective tissue and muscle are destroyed and replaced by granulation tissue, which breaks down, forming multiple abscesses. The infection brings on fibrous tissue reaction, giving to the tissues a thick, brawny appearance which may be confused with sarcoma.¹⁰ This is commonly seen in the cervicofacial case.

The character of the pus is another interesting feature of actinomycosis. The pus is thin and contains small sulphur granules. The granules are found most readily in the pus of a newly opened lesion, rarely in a sinus of long standing. A characteristic of the sulphur granules is that the clubs are found only in the body, never being present in cultures.^{11, 12}

10. Cope, V. Z.: A Clinical Study of Actinomycosis with Illustrative Cases, *Brit. J. Surg.* 3: 35-81, 1915.

11. Dubois, Rene J.: Bacterial and Mycotic Infections of Man, Philadelphia, 1948, J. B. Lippincott.

12. Baker, Roger, et al.: Manual of Clinical Mycology, Philadelphia, 1944, W. B. Saunders Company.

When actinomycosis invades the submucosa of the bowel (appendix or cecum), the disease develops in the form of nodules. As the infection progresses, the nodules blend to form a granulomatous mass. Later the granulomas break down, resulting in a nest of abscesses when opened. These, when opened, lead to multiple discharging sinuses onto the abdominal wall or surrounding tissue. Aside from the extension of the infection into the local connective tissue and the development of sinus formation, the liver may become involved either by direct extension or through the portal vein. Doubtless in many cases extension of the infection will lead to pleuro-bronchial fistulas, as seen in the reported case, wherein, upon the injection of sodium iodide into the sinus tract of the right lumbar region, instantly the patient had a paroxysm of coughing with expectoration of the iodide through the bronchial tree.

The infrequency of lesions in the stomach and small intestine is thought to be due to the inhibiting effect of the acid chyme in the stomach and to the liquid state of material and fast-flowing stream in the small intestine. Cope¹³ reports a case of *Actinomycosis bovis* in which the infection began in the duodenum where the ulcer was found to have perforated the wall of the bowel and stomach, providing an avenue for the escape of the organism from the lumen of the involved viscus into the surrounding connective tissue.

TREATMENT

Formerly, treatment of the disease was directed to the local tissue damage, with no particular attention to the body tissue changes or to restoration of the deprived nutritional state. The former treatment made use of iodides orally, and thymol, both orally and as a medium for injecting the sinus tracts; x-radiation and surgery in the form of exploration, drainage of abscesses and curetment of the sinus tracts, removal of necrotic tissue, and skin grafts. Under such measures the mortality in cases of abdomi-

13. Cope, V. Z.: A Clinical Study of Actinomycosis with Illustrative Cases, *Brit. J. Surg.* 3: 35-81, 1915.

nal actinomycosis exceeded 50 per cent and the morbidity was a prolonged one.^{14, 15}

Present-day treatment of the disease involves not only attention to the local tissue infection but also emphasis on the nutritional change, such as graded anemia with a low blood volume. Since the introduction of the antibiotics, sulfonamides and penicillin have been used with marked success in the treatment of actinomycosis. Their use, together with attention to the nutritional factor, replacement of the reduced blood volume with intravenous electrolytes, when needed, whole blood transfusions, and surgery as indicated to correct local tissue damage, has resulted in reduction of the mortality to a degree comparable to that occurring in the more benign infections. The morbidity of these cases also has been markedly shortened.^{16, 17, 18}

The case reported illustrates the importance of (1) keen search in an abdominal case which develops granulomas, recurrent abscesses or sinus tracts following surgery to the gastro-intestinal tract, particularly when the infection originates in or about the appendix; (2) combating the low nutritional state by means of a high protein diet; (3) overcoming anemia and low blood volume with whole blood transfusions; (4) the efficacy of present-day bacteriostatic agents, and (5) the necessary surgery for drainage of abscesses, the removal of necrotic tissues, and skin grafts as needed to correct tissue defects and to aid the healing of granulating wounds. (In the reported case, surgery was confined to drainage of abscesses.) Such a program has recently been emphasized by Gage et al.¹⁹

14. Good, L. P.: Actinomycosis of the Abdomen, *Arch. Surg.* 22: 307-313, 1931.

15. Wangenstein, O. H.: The Role of Surgery in the Treatment of Actinomycosis, *Ann. Surg.* 104: 752-770, 1936.

16. Farris, Edward M., and Douglas, Russell V.: Abdominal Actinomycosis, *Arch. Surg.* 54: 434-436, 442-444, 1947.

17. Nicholas, D. R., and Herrell, W. E.: Penicillin in the Treatment of Actinomycosis, *J. Lab. & Clin. Med.* 33: 521 (May) 1948.

18. Walker, J. M., and Hamilton, J. W.: The Treatment of Actinomycosis With Penicillin, *Ann. Surg.* 121: 373-384, 1945.

19. Gage, Mims, et al.: Essential Therapeutic Adjuvants in the Surgical Arrest of Wolff-Israel Actinomycosis, *Ann. Surg.* 126: 568, 574-576, 1947.

Evaluation of the antibiotics reveals that penicillin is more effective than sulfonamides in acute stages of actinomycosis, abscess pockets and active drainage of sinuses. Speaking of the efficacy of penicillin, Florey et al.²⁰ and Abraham et al.²¹ state that it has a high antibacterial titer and its effect resembles that of sulfonamides, but comparing their actions one becomes aware of the following significant differences: (1) Unlike sulfonamides, penicillin is influenced to a minor extent by the number of bacteria to be inhibited. (2) Due to its high antibacterial titer, penicillin is of great value in the treatment of heavily infected wounds, on which the sulfonamide drugs seem to have little beneficial action. (3) The bacteriostatic power of penicillin on the different pathogenic organisms is not antagonized to any appreciable degree by the hydrolytic protein breakdown products, or pus, while such substances annul completely the bacteriostatic action *in vitro* of the sulfonamide drugs. This is of particular importance for the successful treatment of infections in which abundant production of pus takes place. In chronic cases the sulfonamides have greater efficacy in bringing about repair of diseased tissues when there is minimum drainage.

Both penicillin and the sulfonamides are bacteriostatic rather than bacteriocidal agents, and repair of diseased tissues is largely dependent upon maintenance of "the dynamic equilibrium of the body constituents" through nutrition^{22, 23, 24} while the organism is being held in check by these bacteriostatic agents.

Since the introduction of antibiotics, the number of cases of actinomycosis requiring surgical treatment has been greatly reduced.

20. Florey, M. E., et al.: General and Local Administration of Penicillin, *Lancet* 1: 387-396, 1943.

21. Abraham, E. P., et al.: Further Observations on Penicillin, *Lancet* 241: 177-188, 1941.

22. Schoenheimer, R.: *The Dynamic State of Body Constituents*, Cambridge, 1942, Harvard University Press.

23. Whipple, G. H., and Madden, S. C.: Hemoglobin, Plasma Protein and Cell Protein—Their Interchange and Construction in Emergencies, *Medicine* 23: 215-224, 1944.

24. Baldwin, Ernest: *Dynamic Aspects of Biochemistry*, Cambridge University Press, 1949.

Surgery is now more an adjuvant than a main reliance in dealing with the disease. Surgical treatment is indicated where there is a blind wound that does not get proper drainage, or blind indurated tracts with abscesses that do not drain, and for the removal of diseased tissue where needed. Before surgery is done, a careful evaluation should be made of the patient's general condition, especially the fluid and protein balance, to avoid shock from blood loss that often follows operative procedure for removal of infected necrotic tissues. The fluid balance should be maintained by the intravenous route (glucose, saline or water) if the intake by mouth is not sufficient. The protein balance should be maintained by the whole blood (citrate) method of transfusion and by a high protein diet.

(For a thorough review of the literature on actinomycosis and a report of a case of advanced abdominal actinomycosis in which the patient developed a flexed thigh, and was successfully treated by radical surgery and supportive measures, see article by Kolouch and Peltier.)²⁵

SUMMARY

1. A case of abdominal actinomycosis (Wolff-Israel) with pulmonary involvement is reported, with a review of the literature.

2. The discussion deals with salient features of the disease, including: (1) how the infection is manifested; (2) the tendency of *Actinomyces bovis* to invade the connective body tissues and tissue planes; (3) the chronicity of the disease.

3. The need for thorough physical examination and repeated laboratory investigation for discovery of the organism is emphasized.

4. The damaging effects of the disease on the body tissues and on the nutritional state are described.

5. A program of treatment is presented, emphasizing (1) repeated blood transfusions and a high protein diet to maintain "the dynamic equilibrium of the body constituents"; (2) employment of bacteriostatic agents such as penicillin and sulfonamides to arrest the infection, and (3) the use of

surgical measures on a conservative basis for drainage of abscesses, curetment and removal of fibrous and necrotic tissues, and correction of tissue defects by skin grafts, when indicated.

PEDIATRIC CASE REPORTS

Edited by

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Clinical Summary: Mst. Charles Edward Pullen, a 17 month old white male infant was admitted to the hospital on April 27, 1949. History obtained from the aunt indicated that the child had been acutely ill for two weeks with vomiting, abdominal distention and fever. Physical examination on admission revealed emaciation and marked abdominal distention. The liver and spleen could be palpated at the level of the iliac crest. Temperature on admission was 103.8 degrees. Laboratory findings: Red blood count 2,360,000, hemoglobin 22.5%, white blood count 7,450 with neutrophils 54%, lymphocytes 44%, and monocytes 2%. Urinalysis showed negative for sugar, albumin and acetone. Fragility test showed beginning hemolysis 0.32 and complete at 0.25 saline. Control was similar. Reticulocyte count was 3.3%. Radiologic findings showed an area of parenchymal infiltration extending to the upper pole of the right hilum into the right upper lobe consistent with pneumonia. Course in the hospital: Patient was given several transfusions, penicillin, streptomycin and aureomycin. Marrow studies revealed no evidence of cells such as are seen in Gaucher's disease or Neiman-Pick's disease. The marrow was normoblastic in type. The temperature varied from 100 to 104 degrees. A splenic puncture was done on 5-4-49 in the morning. The child died at 3:45 P. M.

Clinical Diagnosis: Banti's syndrome; Neiman-Pick's disease.

Final Diagnosis:

Lungs—Histoplasmosis.

Liver—Histoplasmosis.

Lymph Nodes—Histoplasmosis.

Bone—Histoplasmosis.

Duodenum—Accessory pancreas.

25. Kolouch, Fred, and Peltier, Leonard F.: Actinomycosis, Surgery 20: 401-430, 1946.

Comment: This is an example of a fatal fungus disease caused by the organism *Histoplasma capsulatum*. The small fungus organism has been described in the sections of lungs, liver, spleen and lymph nodes in this case. We were unable to see the organisms in the peripheral blood or in the sternal marrow puncture, and the splenic puncture yielded insufficient material for examination. No heart blood cultures were made and no sternal marrow cultures were made in this case. If they had been done the organism probably would have been recovered. The child had developed an interstitial lobular pneumonia as a result of the histoplasma infection in the lung. There is no question but that the child would have died of this infection had it lived even for a longer period of time. Death in this case was probably due to intraperitoneal hemorrhage as a result of the splenic puncture. An interesting finding is the presence of an accessory pancreas beneath the lining of the duodenum. This had no relation to the cause of death.

Findings at Autopsy

External Examination: The body is that of a well-developed, poorly nourished, white male infant 75 cm. in length. The skin and mucous membranes are very pale. The abdomen is greatly distended. There is a recent sutured incision over each internal malleolus. There is no edema of the lower extremities.

Peritoneal Cavity: When the primary incision is made a large amount of bright red blood escapes. Total amount removed from the peritoneal cavity would be approximately 1000 cc. The liver extends 7 cm. below the right costal margin in the mid-clavicular line. The spleen is large. The diaphragm lies at the right 4th interspace and left 5th rib.

Pericardial Cavity: Pericardial cavity contains 25 cc. of yellow fluid but no adhesions.

Pleural Cavities: Each pleural cavity contains approximately 10 cc. of fluid and there are a few adhesions about the right lung.

Heart: Heart weighs 50 gm. It shows no gross abnormality.

Lungs: Right lung weighs 70 gm. and the left 85 gm. Each lung is subcrepitant and

grey-red. The bronchioles and bronchi are filled with bloody mucus.

Liver: Liver weighs 870 gm. It is greatly enlarged. The capsule is smooth and glistening. The surface made by cutting is mottled, yellow-red.

Gallbladder: Gallbladder is filled with yellow bile. Biliary ducts are not obstructed.

Spleen: Spleen weighs 315 gm. The capsule is smooth and glistening. In the diaphragmatic surface there are several slightly irregular breaks in the capsule where the splenic puncture was done. The surface made by cutting is dark red.

Adrenal Glands: Adrenal glands show no gross change.

Kidneys: Kidneys weigh together 90 gm. The capsule strips with ease from a lobulated dark red surface. Cortex is even and averages 2 mm. in width. Pyramids, pelvis, and ureters appear natural.

Urinary Bladder: Urinary bladder shows no evidence of hemorrhage or tumor.

Gastro-Intestinal Tract: Esophagus, stomach, small and large intestine appear natural.

Pancreas: Pancreas weighs 30 gm. It is lobular and pale yellow.

Lymphoid Tissue: The mesenteric lymph nodes are firm, grey-red and measure up to 1 cm. in diameter.

Osseous System: Osseous system shows no gross change.

Head: Head not examined.

Spinal Cord: Spinal cord not examined.

Anatomical Diagnosis:

Liver—Marked hepatomegaly.

Spleen—Marked splenomegaly.

Spleen—Small rupture of capsule with marked intraperitoneal hemorrhage.

Lungs—Lobular pneumonia.

Microscopical Description:

Heart: Sections of myocardium show no unusual changes.

Aorta: Sections of aorta appear natural.

Lungs: In sections of lungs there is an infiltration of cells in the interstitial tis-

sue. These are lymphocytes, sometimes plasma cells, and large irregular cells with a vesicular nucleus. These are generally epithelioid cells or macrophages. In some areas there is hemorrhage into the alveoli with beginning organization of clot. In other areas small vessels are filled with organized thrombi. In scattered areas there are tubercle-like structures with multinucleated foreign body giant cells, epithelioid cells and sometimes a homogeneous pink matrix between the cells. There is no evidence of caseous necrosis in the center of the tubercles and there is no peripheral ring of lymphocytes. Sometimes these tubercles are small. Bronchi are filled with a few neutrophils and granular pink material. Many of the large irregular cells in the sections of lungs are macrophages, and in their cytoplasm there are small round blue or sometimes crescentic blue structures surrounded by a clear capsule. The central part of these structures is homogeneous. The capsule varies somewhat in width but is very clear-cut in every case.

Liver: Sections of liver show that 50 to 75% of the liver cord cells are filled with small and large clear vacuoles. There is some infiltration of lymphocytes and plasma cells in the liver sinusoids. Many of the Kupffer cells are separated from the lining of the sinusoids. They are filled with many round or crescentic blue structures surrounded by a clear capsule as described above in sections of lungs. In the liver sinusoids immediately about the central vein there are some erythrocytes present.

Adrenal Glands: Sections of adrenal glands show no changes.

Kidneys: Sections of kidneys show that there are a few casts in the collecting tubules but no other unusual changes are noted.

Gastro-Intestinal Tract: Sections of stomach show a slight infiltration of lymphocytes in the mucosa. Sections of duodenum show a similar infiltration of lymphocytes. In the submucosa, there is a mass of pancreas with acinar tissue, ducts and islands of Langerhan. Sections of small intestine show no unusual changes.

Pancreas: Sections of pancreas show numerous islands of Langerhan. There are no unusual changes noted in any of the tissue.

Anus: Sections of anus show a surface layer of stratified squamous epithelium with marked pigmentation in the basal layer. In the underlying tissue there are spaces filled with erythrocytes.

Lymphoid Tissue: Sections of mesenteric lymph nodes show an infiltration of lymphocytes and macrophages in the peripheral and medullary sinuses. In other areas there is some fibrosis of the tissue and extensive infiltration of macrophages with occasional multinucleated foreign body giant cells. In these regions there are heavy bands of collagenous tissue deposits. The macrophages in all portions of the lymph nodes contain a few to numerous blue, round or crescentic structures surrounded by a clear zone. These resemble those already described above in the lung and liver. Sections stained by Kinyoun's method show no acid fast bacilli. A few of the fungus organisms are acid fast.

Bone: Sections of rib show a few macrophages containing the structures as described above in the other sections.

Cancer—Diagnostic problems are increased by the fact that the symptoms of curable cancer are rarely distinctive. The mammary cancer is only a lump, the gastric lesion indigestion, the colonic neoplasm constipation and the pulmonary malignancy a cough or thoracic discomfort. It is only by awareness of the age and sex predilection for a given type of cancer, and alertness to the persistence of symptoms, that a more thorough examination will be made and cancer discovered at a time when surgical therapy can be effective. Many internal cancers are accessible to digital or endoscopic examination and by such means a definitive diagnosis may be promptly made.

Since many types of cancer are not manifested clinically until far advanced, we cannot wait until symptoms appear to treat the patient. For this reason every effort must be made by routine physical examinations, screening methods, and periodic check-ups to discover cancer at the earliest possible stage. There seems little doubt, for instance, that the majority of cases of bronchogenic carcinoma are radiologically visible for some months before they become symptomatic. Such detection is arduous and the incidence of cancer so discovered is low so that faith, patience, and persistence are required. However, the high incidence of cures obtained in the early lesions thus discovered is ample reward.—*De Camp, New Orleans M & S. J., April '51.*

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(Term: January 1, 1951–December 31, 1952)

AMEBIASIS

"Numerous surveys by many physicians would suggest that amebiasis occurs in 5 to 10 per cent of the population of the United States. The suggestion that 20 per cent of the American people are infected by *Endamoeba histolytica* probably indicates too high an incidence. The disease is universal in its distribution over the globe. This has been known for many years, as witnessed by the early literature on the disease, but emphasis of this fact was forcibly brought to physicians' attention during the outbreak in Chicago in 1933. Consciousness of its presence by the everyday practitioner of medicine is of the greatest importance. The control of water supplies, proper food handling and elimination of insects that are transmitters of the causative agent constitute important steps in the eradication of this serious disease.

"The importance of these statements cannot be overemphasized, and their emphasis and reemphasis may go a long way toward controlling the disease caused by *E. histolytica*."

Thus does Bargaen¹ open his excellent discussion of this ever present and frequently neglected disease. He goes on to tell us that "The chronic form of the disease is of particular concern. It causes ill health, lowered vitality and decreased resistance to other infections. Patients suffering from chronic amebiasis seldom visit the doctor, and thus, perhaps, the doctor does not have in mind the possible presence of the disease; however, these people can and do transmit the disease. The infection is frequently water borne and is due to poor sanitation, but it also is commonly transmitted by food, food handlers and insects.

"In 1948 Anderson and associates showed that 17 per cent of the personnel of a Memphis hospital were infected with amebas. This percentage may be somewhat high, since a survey of the entire state of Tennessee from 1930 to 1932 showed an incidence of only 11.7 per cent in some counties and 6.8 per cent in others." And we encounter the following highly significant lines: "An 'ameba carrier' is in reality a person who has

1. Bargaen, J. A.: Present Day Management of Amebiasis, J. A. M. A. 145: 785 (March 17) 1951.

amebiasis that has not manifested severe enough symptoms to necessitate the attention of a physician. The seriousness of an epidemic of amebiasis is comparable to that of an outbreak of smallpox, yellow fever, bubonic plague or other similar acute conditions. Although epidemics of the diseases just mentioned usually create a panic and result in prompt and drastic measures to clear up the infection, an epidemic of amebiasis frequently may be treated rather lightly and allowed to have its own way.

"Most persons who are hosts to *E. histolytica* seem to have some symptoms that may be ascribed to its presence. Much has been said about the 'carrier state' of amebiasis, but recent studies by physicians from various parts of the world indicate that this term has been used too freely, with the resulting tendency not to take the presence of *E. histolytica* in this group of persons seriously enough. Albright and Gordon stated

that there is no such thing as a healthy carrier of amebiasis. In an editorial published in 1947, it is stated, 'The carrier represents an active stage of the disease.' The evidence concerning the inability of the parasites to live in the lumen of the bowel without producing lesions is rather conclusive. The aim of specific treatment is the eradication of all the parasites from the host."

Bargen has done well to stress the attitude of indifference, or even of complacency, that all too often prevails in regard to amebiasis. Unfortunately, many physicians are poorly informed about this disease, especially its chronic aspects. And the health departments find it difficult or impossible to keep track of the so-called carriers. All general practitioners, surgeons, internists, pediatricians and public health workers should heed Bargen's excellent and well rounded admonitions.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

HEALTH: ALABAMA'S MOST PROFITABLE INVESTMENT

Seale Harris, M. D.

Birmingham, Alabama

"Health is a purchasable commodity," exclaimed Queen Victoria's Prime Minister, Benjamin Disraeli, about a hundred years ago, in appealing to Parliament to provide funds for improving health conditions in Great Britain. During the last three decades the city of Birmingham and the state of Alabama have proved the truth of this assertion by the great English statesman and phrasemaker. It is now an accepted fact that money can buy essential necessities in transforming even tropical jungles into paradises, as in Cuba and Panama, in which inordinately high death rates were reduced to lower levels than in any city of the United States fifty years ago.

Forty years ago the foremost citizens of Mobile gathered to pay homage to General William C. Gorgas for his great achievement in insuring the Gulf cities against any further epidemics of yellow fever, and in

paving the way for the eradication of malaria and other tropical diseases from the South. In his soft spoken address on that occasion General Gorgas made a prediction that is coming true. He said: "With the eradication of yellow fever, malaria, dysentery, and other tropical diseases, the centres of population and industry in this country will move to the South." That General Gorgas was a true prophet is being proved by the incredible development of industry, and the increase in population of Mobile, Dothan, Montgomery, Selma, Birmingham, Tuscaloosa, Gadsden, Decatur, the Tricities (Florence, Sheffield, and Tuscumbia) and Huntsville.

It is within the memory of thousands of Birmingham citizens when thirty-five years ago our rapidly growing city spent only five thousand dollars a year to protect its men, women and children from typhoid fever, infantile colitis and other communicable diseases. In 1916 there occurred an epidemic of typhoid fever in Birmingham in which there were approximately 1,000 cases and 300 deaths. Typhoid fever had been endemic

in Birmingham since it was founded in 1872. There were outbreaks every year, with many cases and many deaths.

Fortunately for Birmingham, Jefferson County, and the state of Alabama, Dr. Thomas D. Parke was Chairman of the Jefferson County Board of Health when the 1916 epidemic of typhoid fever ravaged Birmingham. Dr. Parke, professor of pediatrics in the Birmingham Medical College, was a very able man, a physician of great attainments, and a man of prodigious energy. He and a committee of physicians appeared before the City Commissioners and the County Board of Revenue begging for money to control the typhoid epidemic. Both bodies said there was no money available for that purpose. Dr. Parke believed that if the public knew the facts about the typhoid epidemic, city and county officials would find the money to end typhoid fever forever in Birmingham.

I had the privilege of going with Dr. Parke to see Mr. Frank Glass and Mr. Victor Hanson of the *Birmingham News* and Mr. Edward Barrett of the *Age-Herald*. He told them of the number of cases of typhoid and of the deaths that had occurred up to that time; and asked their cooperation in educating the public regarding the disease, and the sanitary methods necessary for its prevention. Then the people of Birmingham witnessed a remarkable demonstration of the power of the press for good. The *Birmingham News* and *Age-Herald* published a list and the location of new cases and deaths from typhoid fever every day. Each paper assigned a reporter to write a daily story on typhoid; and Mr. Glass and Mr. Barrett wrote many editorials regarding typhoid fever as a menace to the health and prosperity of Birmingham.

After this campaign of education, the civic organizations, the women's clubs, and the churches united with the physicians in the effort to induce the Birmingham City Commissioners and the Jefferson County Board of Revenue to find money to pay a full-time County Health Officer and establish an adequate department of health in Birmingham and Jefferson County. They appropriated \$165,000 for the first year.

Dr. Parke brought epidemiologists from the U. S. Public Health Service to Birmingham.

They found that the cause of the epidemic was ice cream made from infected milk. Dr. Judson Dowling was elected County Health Officer. His first efforts were directed toward the inspection of dairies and the pasteurization of milk. In a few weeks there were no more cases of typhoid fever in Birmingham and now it does not exist in Jefferson County.

Dairymen protested that they were being ruined by Dr. Dowling. They threatened his life and, finally, a few dairymen lured Dr. Dowling out at night, horse-whipped him, tied him to a tree, and left him there until morning. But they did not stop Dr. Dowling in his efforts to give Birmingham pure milk. Dr. Dowling, with ample funds, built up the best city department of health in the United States, and he maintained it as such for twenty-five years.

The city of Birmingham appropriated for the year 1950-51 \$263,890 and the county of Jefferson \$150,000 for its Department of Health. In addition it receives \$220,088 of Federal and State funds. All sources amounted to a total of \$688,933 for the fiscal year 1950-51. Dr. Denison, the present Health Officer, maintains the high standards of his predecessor and Birmingham is one of the healthiest cities in the world.

The investment for health in Birmingham in the last twenty-five years has yielded dividends in saving the lives of several thousand men and women who have contributed to the welfare and prosperity of Birmingham, Alabama, and the Nation.

In 1917, when Dr. Samuel W. Welch became State Health Officer, Alabama was spending \$25,000 for the prevention of disease. Dr. Welch was a medical statesman who knew how to deal with legislators and governors. The Kilby Legislature appropriated \$448,000 for the ensuing quadrennium. The Brandon Administration added \$55,000 a year; and in 1920 Dr. Welch persuaded Governor Bibb Graves and the Legislature to appropriate \$1,161,000 for public health for the next four years. Dr. Welch used this money wisely and succeeded in getting grants from the U. S. Public Health Service, the Rockefeller Foundation, the Commonwealth Fund, and other sources. He also persuaded city and county officials to supplement the money which he could assign

for local health work, and he almost lived to see a complete health unit with a full time health officer in each county in Alabama.

State Health Officer Welch planned and supervised a campaign against malaria, typhoid fever, dysentery, hookworm, and other communicable diseases in every county, city and precinct in Alabama. It also should be said to the credit of the State that there has been no discrimination against Negroes in public health activities in Alabama. It should be added that all classes of the public cooperated with the health authorities in the effort to prevent all communicable diseases. Dr. Welch was fortunate in the selection of his associates and he built up an efficient public health organization in Alabama, which certainly is one of the very best in the United States. Not the least important factor in improving the health conditions in Alabama has been an enlightened public opinion resulting from a continued campaign of education by the daily and weekly newspapers of the State.

Wise legislators increased appropriations for public health which hastened the day when malaria, typhoid fever, dysentery, and hookworm ceased to be major public health problems. It is impossible to estimate the number of lives saved in our State by the almost complete eradication of tropical diseases, because there were no accurate vital statistics in Alabama until, under the regime of Dr. Welch, the entire State was placed in the registration area of the United States Census Bureau. There also are no statistics for estimating the number of cases of illness prevented, nor of measuring the increase in the improvement of the health, happiness and prosperity of the citizens of Alabama which resulted from the wise expenditure of public funds for the prevention of disease.

After the death of Dr. Welch in 1928, Dr. Norment Baker became his worthy successor. He carried on the duties of the State Health Officer faithfully for ten years. After the death of Dr. Baker, Dr. B. F. Austin was an efficient Health Officer for five years. After his resignation in 1945 Dr. D. G. Gill was made State Health Officer. The Alabama State Department of Health, under the direction of Dr. Gill, is recognized as one of the foremost public health organizations in the United States. In Alabama in

the year 1949 the number of deaths per thousand of population was 8.7. This may be regarded as the minimum attainable death rate.

In 1809 Thomas Jefferson, after eight tempestuous years in the White House, retired to Monticello, his mountaintop home. Meditating over what he might accomplish as a retired statesman he said: "The present generation is already lost. Educate the youth of our country." He then devoted the last fifteen years of his life to the founding and the building of the University of Virginia.

The Sage of Monticello was partly right in his belief that education should begin in youth. It is difficult to change the ideas and habits of adults. Now we know that instruction in personal hygiene should begin in childhood; and children, even before they enter high school, should be taught elementary physiology, and that he who violates the inexorable laws of personal or public hygiene will inevitably suffer the consequences.

Up to this time the activities of state, county, and city health officers have been directed largely toward the prevention of communicable diseases, such as malaria, dysentery, infantile colitis, tuberculosis, influenza, diphtheria, scarlet fever, syphilis, and poliomyelitis. The reduction in the ravages of those diseases ranks among the miracles of modern medicine. Germs, viruses and other causes of contagious diseases still exist and war against them must be waged relentlessly until they are eradicated from civilized nations. While the death rates have been reduced amazingly from communicable diseases, particularly of childhood, there has been an increase in the degenerative diseases, such as insanity, cancer, cardiovascular diseases (of heart and blood vessels), and other diseases that increase in frequency after forty years of age.

The Alabama Legislature should not reduce appropriations for the State Department of Health, but should increase them, because of added obligation to educate the public regarding nutrition, cancer, heart diseases, and other health problems. A factor which makes it necessary for the State to increase its investment for buying health is the lamentable shortage of physicians in the rural districts of Alabama. It is a fact that

in many counties there are few physicians so that the sick, particularly among the indigent classes, receive inadequate medical care. Sad to relate, but admit it we must, there are many thousands of poor people in the rural districts who must run the risk of dying, because they cannot pay for hospital care when they become ill from serious diseases. The State should—and must—provide hospitalization for its indigent sick. The physicians of Alabama are glad to give their services in hospitals to charity patients.

JUST RAMBLINGS

W. A. Dozier, Jr.

Director of Public Relations

As the Committees of the Association start another year of work, it is perhaps fitting to stop for just a minute and muse about some of the things which will have to be kept in mind if we hope to make advances. The human mind is a wonderful, but at the same time, a peculiar thing. Someone once remarked that the greatest blessing bestowed on mankind was his ability to forget. Perhaps that is true. Surely one could not remain sane if all the unpleasant things he had known, or which had befallen him, were ever present to drag him down every day. But as is usually the case, this blessing can also become a curse. It is often too easy to forget the reasoning behind an idea, the purpose, or the urgency. So each of us must be alert to the fact that we must not forget certain key factors.

Another great asset of the human mind is its ability to pin point an issue and work toward that specific goal. Were we unable to do this there is grave doubt that we as individuals or as a nation would ever accomplish very much. As before, however, one must also realize that this too may be a detriment. A person, or a group, cannot completely exclude everything which does not at the moment seem pertinent; for if he does, he is likely to overlook some hidden value and find that the goal is unattainable because of this oversight.

Then we find that it is very easy to exclude, or at least repress, those things we do not want to think of or do not wish to consider. Once a person has reached this point it is very easy to become dogmatic. Once this has happened, it may be natural to become angry with anyone who does not agree

with you. We must always remember that every man has a right to his own opinion, just as you have, and that his opinion is as valid to him as yours is to you. Of course you have a right to try to change this other man's ideas, but such is not always possible.

Sometimes our minds seem to play us tricks in building up the small things too much. Perhaps we must agree with the old saying that it's the little things that count. To say the least it is certainly the little things which aggravate the most. Every now and then we must stop, take a view of the whole situation, and put these inconsequentials in their proper place.

Again it is very easy to become so immersed in what we are doing that we do not realize that conditions change and situations are fluid. We cannot allow our zealousness to blind us to what is happening around us.

A certain type of griping is good. Somehow it seems to help to get things out of your system by griping about them. Back during the last war, it was often said that a griping man was a good man. A certain amount of griping did seem to be a healthy thing. Still in all, one has to be careful not to take it too far and become a malcontent. One cannot afford to alienate his friends with his incessant griping.

The human mind is also peculiar in that those things which seem hardest at the time and those things which give us the greatest trouble are the ones we remember most pleasantly at some future date. Perhaps this is due to the greater satisfaction which comes from doing a tough job. Whatever the reason, it can on occasion be of help to remember that later you will look back with fond memories on a certain situation.

One other rambling seems pertinent here. One becomes so bound down by the present situation that he cannot see how it can ever come out right. Then the mind takes a turn, and we see the humor of it all. We laugh and tell ourselves that we can do the job no matter what comes. And besides that, this will pass and perhaps we will not even remember it five years from now.

Ramblings? Yes. Scientifically sound? Not likely. Still they are things that seem important at a time when reports have gone in and individuals and groups begin another series of efforts and hope to tally numerous gains some twelve months hence.

TRANSACTIONS OF THE ASSOCIATION

1951 SESSION

PART I

TRANSACTIONS OF THE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA HELD AT MOBILE, APRIL 19, 20, 21, 1951.

First Day, Thursday, April 19

The Medical Association of the State of Alabama convened in annual session in the ballroom of the Admiral Semmes Hotel, Mobile, and was called to order at 9:00 A. M. by the President, Dr. Joseph M. Weldon.

Invocation was offered by the Rev. J. M. Crowell, Pastor, Central Presbyterian Church, Mobile.

Addresses of welcome were delivered by the Hon. E. M. Megginson, Mayor of Mobile, and Dr. Andrew D. Henderson, President of the Mobile County Medical Society, host to the Association. Dr. Henderson's address follows:

Dr. Henderson: As this year's President of the Mobile County Medical Society, I welcome each of you to Mobile, Mother of Mystics due to its claim of having the first mystics society which celebrated Mardi Gras.

It is somewhat fitting that we doctors should convene here, for Mobile might also be considered the Mother of Medicine in Alabama. It was here that the Medical Association of the State of Alabama was organized on Dec. 1, 1847. Actually, the physicians in attendance on that day had met to make plans for a state hospital for the insane but after three days of fully maturing all plans and details they organized into the Medical Association of the State of Alabama.

A few days ago I read the following paragraph in a column of our Mobile daily newspaper entitled "75 years ago." "On Wednesday, April 12th, 1876 the Alabama State Medical Convention opened with Dr. J. J. Dement of Huntsville presiding."

Mobile too has one of the oldest County Medical Societies in the State. We were chartered in 1841 to serve as a Board of Health for Mobile.

Throughout the past the Mobile County Medical Society has actively lived up to its by-laws to provide, promote and safeguard the health of persons living within Mobile County and to disseminate medical information to all members of the Society.

We are proud that we can be your hosts once

again and only wish we could serve in that way more often.

For my associates and for our City I once again bid you welcome to Mobile—the Mother of Mystics and a Mother of Medicine.

Reports of committees were called for by President Weldon, each, in its turn, being referred to the State Board of Censors.

REPORTS OF COMMITTEES

Mental Hygiene

The Mental Hygiene Committee respectfully wishes to call to the attention of the Association the following developments in the fields of psychiatry and mental hygiene during the past year:

1. The location of two psychiatrists in the city of Mobile.
2. The employment of Mrs. Lela S. Anderson by the Alabama State Hospitals to organize and direct an affiliate school for the psychiatric training of student nurses.
3. The establishment of a psychosomatic service within the Medical College of Alabama.
4. Community mental health services by the Lauderdale County Health Department under the supervision of Dr. H. W. Cheney, County Health Officer.
5. Community mental health services by the Mobile County Health Department under the supervision of Dr. O. L. Chason, County Health Officer.
6. The expansion of community mental health services by the Psychology Department, University of Alabama, in cooperation with Bryce Hospital and the Division of Mental Hygiene of the State Department of Health.
7. Community mental health services by the John A. Andrew Memorial Hospital, Tuskegee, in cooperation with Tuskegee Institute, the Tuskegee Veterans Hospital, and the State Division of Mental Hygiene.

This Committee conducted a survey among the State Psychiatrists and found no disposition to amend basically or augment any of the state laws relating to mental illness.

The Committee wishes to recommend that the policy adhered to in some counties, that physicians not be required to testify in person regarding commitment to the Alabama State Hospitals, be followed in all counties.

The Committee wishes to emphasize the need for psychiatric bed facilities in Mobile, Montgomery, and Birmingham.

The Committee wishes to express its appreciation to the Mental Health Society of the State of Alabama for its support during the past year.

Jack Jarvis, M. D.
Chairman

Frank A. Kay, M. D.
J. S. Tarwater, M. D.

Maternal and Child Health

Maternal mortality rates in the United States and in Alabama are still improving. The forces responsible for this are many; everyone concerned with maternity care has contributed. For the first time in our history the national rate has fallen below one maternal death per 1,000 live births. The official rate for 1949 was 0.98. To accomplish this milestone, states with low rates and states with high rates have all done their part. In 1949 there were 30 states with rates below 1.0 and only 2 states above 2.0 (Alabama 2.1 and Mississippi 2.4).

These data indicate that our improved State rate has helped lower the national rate. Our potentials for improvement here in Alabama are of course greater than those of the nation at large even though we are indeed still handicapped for reasons of common knowledge.

Your Committee has remained active. We have talked maternal mortality to just about any professional or lay group willing to listen. Our five-year county survey and our five-year hospital study have been completed and will soon be published. Please read them.

Our major problem, lack of professional delivery care for Negro maternity indigents of many counties, remains unsolved. Initial efforts at some improvement in midwife control and instruction have been started.

Real effort has been made by the State Health Department in the activation of new antenatal clinics. Many new clinics have been activated since our last annual meeting and there are now only about 13 counties without such provision for their indigents. Dr. W. K. Sharp, Director of the Bureau of Maternal and Child Health, appreciates the interested cooperation of many Alabama physicians. This Committee thanks you for your necessary assistance to Dr. Sharp.

Some facts of interest:

1. 85% of all confinements in the U. S. are now in hospitals; 57% of Alabama births are in hospitals.

2. 5% of U. S. births are unattended by a physician but 23% of Alabama births are so unattended.

3. In 10 years Alabama has decreased its maternal death rate 62%; six other states have made less improvement.

During the past year the Jefferson-Hillman Hospital has received \$9,000 from the Federal Government for use with prematures. This has been used chiefly with Negro prematures. One

thousand doses of BCG were given newborns at Jefferson-Hillman. These cases are to be followed up and the final report will come in future years.

Recommendations:

1. We suggest that the State Health Department continue its efforts regarding (a) antenatal clinics, (b) midwife control and instruction, (c) lay publicity regarding maternity care problems, and (d) premature centers and BCG evaluation.

2. That sincere thanks and appreciation be extended to all Alabama physicians for their evident interest in better maternity care here in our state.

T. M. Boulware, M. D.
Chairman

Hughes Kennedy, M. D.
A. E. Thomas, M. D.

Anesthesiology

As in other fields of medicine, the current national defense program and schedule have of necessity curtailed some of the activity in ours. Particular reference is made to the decrease in availability of younger physicians who can engage in residency training in anesthesiology. This is true not only in our State but also in other states.

Since our last report, two additional qualified physician-anesthesiologists have located in Alabama. This may not seem like any large number but we consider it significant, since only twelve years ago there was only one in the entire State. We shall continue to try to stimulate further increases in our ranks. We should like to point out again that of prime importance must be the opportunity for such practice of medicine. The responsibility for providing anesthetic care of a quality commensurate with the standard of surgical care in a community should be the responsibility of all members of the medical profession and should not just be left up to the hospitals solely, or leave it to anesthesiologists to provide the stimulus and interest as a field of endeavor in medicine. During 1950 the American Medical Association, through its Hess report, defined anesthesiology as the practice of medicine. We ask the cooperation and help of all members of our Association in interesting recent medical graduates in larger numbers to investigate anesthesiology as a potential branch of medical practice for themselves.

The residency training programs in Alabama are well established now and functioning satisfactorily. The physicians who do this type of practice still avail themselves quite frequently of opportunities to take part in the scientific programs of local and regional medical meetings. Likewise, two members of the Committee took part in a national institute for nurse anesthetists held in Birmingham in February 1951.

The development in anesthesiology has progressed rapidly from that state when it was considered only the technical ability to render a

patient insensitive to the surgery was necessary to the accomplishment that now the anesthesiologist is a clinical physiologist and pharmacologist, and as a result has much to offer both the patient and surgeon.

E. B. Robinson, Jr., M. D.
Chairman
Alice McNeal, M. D.
Sid W. Collier, M. D.

Postgraduate Study

The general plan of postgraduate instruction, initiated in 1949-50, through postgraduate assembly groups within various counties, was followed.

This program was carried on through cooperation of the Postgraduate Committee of the Association with the Medical College of Alabama and assembly groups in various strategic areas of the State. It was financed through the honoring of field vouchers from \$1,000 appropriated by the State Medical Association, \$1,500 made available by the State Department of Health, and individual assembly fees.

From May 11 through December 14, 1950, eight assemblies were held as follows: Decatur, Demopolis, Enterprise, Mobile, Selma (3), and Troy. Seventeen instructors of the faculty of the Medical College of Alabama presented and discussed the subjects listed below. A question-answer period followed each meeting.

- Traumatic Surgery.
- Office Anesthesia.
- Uterine Inertia and Tetany:
- Gallbladder and Biliary Duct Diseases.
- Uterine Inertia, Tetanic Uterus and Ring Formation.
- Nutritional Diseases.
- Diagnosis of the Acute Abdomen.
- The Acute Abdomen in the Newborn and Children.
- Uterine Behavior.
- The Common Skin Diseases Seen in General Practice.
- Congestive Heart Failure.
- Treatment and Management of Heart Disease Without Laboratory Aid.
- The Handling of the Borderline Obstetrical Pelvis.
- Medical Treatment of Hypertension.
- Diagnosis and Management.
- Thyroid Diseases and Thyrotoxicosis.

This type program has been well received and has been by far the most satisfactory kind of instruction offered through cooperation of the above agencies.

The Committee recommends the continuance of this type of postgraduate instruction for 1951-52 and requests that the Association, through its Board of Censors, increase its annual appropriation from \$1,000 to \$1,800, with the request that

the total be turned over to the Medical College of Alabama for proper disbursement through its Business Manager instead of making it available through field vouchers only, as was done this past year. The matter of preparing field vouchers will not only relieve the office of the Secretary of the Committee and the business office of the Medical College of considerable detailed work but will eliminate the necessity of busy practicing physicians having such vouchers notarized and returned to the office of the Committee chairman. Considerable delay has sometimes resulted, through this procedure, in collecting vouchers for clearance through the business office and prompt return to the Secretary of the State Association. While it is true that all lecturers receive an honorarium for their contribution in this program, the mechanism through which this is paid does not fall far short of an imposition on the participants. It is the consensus of the Committee that this system is not satisfactory and if it can be changed as above requested it will be appreciated by all concerned. However, if the Board of Censors concludes that the system of field vouchers must be kept in force, it is earnestly requested that the sum of \$350 be made available to the Medical College of Alabama and its Business Manager for secretarial service and incidental expenses incurred in this program.

The financial statement for the period March 23, 1950-March 31, 1951 follows:

Financial Statement*	
Receipts by Medical College	
Initial Cash Balance	\$ 263.45
Receipts:	
Fees from Assemblies	174.00
State Medical Association	350.00
Total	<u>\$ 787.45</u>
Disbursements by Medical College	
Secretarial Services	\$ 275.00
Travel	10.00
Postage	2.20
Balance on Hand	500.25
Total	<u>\$ 787.45</u>
Agency Funds Honored by Field Vouchers placed at Disposal of Committee by:	
State Medical Association	\$1,000.00
Department of Health	1,500.00
Total	<u>\$2,500.00</u>
Field Vouchers for:	
Honoraria and Travel	\$1,600.00
Unexpended Agency Funds	900.00
Total	<u>\$2,500.00</u>

*Rendered by Mr. Paul Schatz, Business Manager, Medical College of Ala.
The Committee expresses appreciative thanks to the participating faculty lecturers, members

of the Postgraduate Seminar Committee of the Medical College of Alabama, the various assembly groups for their services, the State Health Officer, Dr. D. G. Gill, and the State Board of Censors for making funds available for promoting the program, without whose unified cooperation this would not have been possible.

Ralph McBurney, M. D.
Chairman

Cabot Lull, M. D.

Alfred J. Treherne, M. D.

Cancer Control

The progress made in the cancer program is most encouraging. One cannot list the accomplishments in this type of report, but the general topic of cancer is making steady and constant progress within the State of Alabama.

We are now reaping the benefits of some of the groundwork done by our predecessors, especially the work done by Dr. J. P. Chapman and Dr. Karl Kesmodel who were chairmen of this Committee for a number of years.

We realize that there are many phases of cancer that have not been touched and probably will not be for a number of years, but we do feel that the over-all picture shows steady progress.

EDUCATION

We feel that the chief progress made in any field, and especially in cancer work, is in the dissemination of knowledge. One of the chief purposes of this Committee is to try to educate the general public, and particularly the physicians of Alabama, as to the various phases of cancer—diagnosis, treatment and research. Last year, the Cancer Committee, through the State Health Department, initiated the April edition of the State Medical Journal to be dedicated to the cancer program. The edition of last year was made up of a number of excellent papers pertaining to cancer. This year the April edition contained six excellent papers pertaining to the diagnosis and treatment of the disease. We realize that all phases of cancer and all the organs that may be involved cannot be taken up in one edition, but we do hope from year to year, and probably throughout the year, to have at least general papers covering most of the common aspects of cancer, particularly the usual sites of cancer and the modern treatment.

Dr. Douglas Cannon, Editor of the State Medical Journal, has been most generous, and it has been through his encouragement and guidance that the April edition of the State Journal has been made possible. Dr. Cannon has been kind enough to emphasize cancer, not only in the April edition but throughout the year there have been special articles pertaining to treatment, diagnosis, and especially propaganda in regard to cancer education.

Through the Department of Health, the Cancer Bulletin has been distributed to all physicians within the State. This bulletin is a unique, instructive summary of the various methods of

diagnosing and treating cancer. There are some very impressive drawings and cartoons in these bulletins which emphasize the important phases of cancer.

It would behoove all doctors to be especially diligent and look through these bulletins when they come across your desk, and try to keep them on file as they are full of excellent and up-to-date information.

Through the American Cancer Society, Alabama Division, a special new bulletin is being distributed to all physicians in the state of Alabama. This bulletin is titled CA. The publication is a quick summary of the new work being done in the cancer field. It corresponds very closely to a number of our lay journals which summarize the various articles written. One can scan through the pages of this booklet and be able to answer a number of questions that the laymen will present in regard to various new methods in the diagnosis and treatment of cancer patients.

Another method of disseminating knowledge is through the motion picture. There are a number of films available dealing with various aspects of cancer. These films are available through the State Health Department and through the American Cancer Society, Alabama Division. Some of the films are strictly professional, and there are others available for mixed audiences.

We hope that many of the County Medical Societies will avail themselves of the opportunity of showing these motion pictures. This year we are especially emphasizing the film pertaining to Cancer of the Breast. The American Cancer Society is trying to have as many women as possible see also the motion picture, "Breast Self Examination." If that be the case, it is certainly advantageous for us as physicians to be able to answer these patients' questions when they present themselves for breast examination.

With approximately 210,000 deaths from cancer in the United States in 1950 (it is estimated that probably 70,000 of that number could have been saved if they had only been diagnosed and treated early), we need to emphasize again the importance of early diagnosis and early treatment.

RESEARCH

Cancer research is going on in Alabama at a very progressive rate. Most of this is being done through grants from the American Cancer Society. There is a moderate amount of research being conducted by a number of our schools, particularly the State schools and the Medical College of Alabama.

This Committee has no direct connection with the research program but we have been watching its progress and endorsing all the worth-while investigative work going on within the State. You will probably hear more in regard to the research phase of the cancer program when Mrs. Lillian Meade reports on the activities of the American Cancer Society, Alabama Division. During the past two years approximately \$250,000

has been spent on research within the State, contributed by the American Cancer Society.

CLINICS

We are proud of our five state-aid cancer clinics. They are all approved by the American College of Surgeons' Standardization Committee. These state-aid clinics diagnose and treat only indigent patients sent in through the Welfare Department. There were 1,826 patients treated through the clinics in 1950—897 white and 835 colored, 587 males and 1,145 females, with 94 not broken down as to color and sex. We feel that many patients are not getting the care they need through these clinics, but with the present State appropriation for cancer control only early cases can be sent to the clinics for diagnosis and treatment. There are no funds available for a complete program. In fact, we are not able to treat leukemias, lymphomas, Hodgkin's disease, cancer of the skin, and cancer of the brain, to say nothing of a number of far-advanced cases which need attention.

We feel there is a definite need for some thought to be given to the terminal cancer patients within the State. All of us associated with the clinics are often confronted with the problem of what to do with far advanced terminal cases, and we realize there is very little we can do with our present set-up.

Very fortunately the American Cancer Society, Alabama Division, has made drugs available in terminal cases for relief of pain. It also furnishes dressings. The American Cancer Society certainly cannot take over the treatment of patients nor do we wish it to do so.

While we are speaking of cancer clinics, it should be emphasized that every doctor's office is a cancer detection clinic; that if every doctor will do what he knows should be done in examining patients, early diagnosis will be made on a number of patients by simply listening to the patient's story and by making a very simple examination, such as inspection of the skin, mouth and lips, palpation of nodes, breast examination, and pelvic and rectal examination. Special examinations will have to be done for chest, larynx, gastrointestinal tract, and kidneys.

AMERICAN CANCER SOCIETY

The Cancer Committee feels most grateful for the close cooperation given it by the Alabama Division of the American Cancer Society under the splendid leadership of Mrs. Lillian G. Meade.

Your Chairman had the great experience of being a delegate to the national meeting of the American Cancer Society in New York last October. It is a most heartening experience to see how many fine laymen are working on this problem of cancer. One cannot but feel that with all this effort and with all the money that is being made available for cancer work that real progress is being made, and that within the next few years we will have better things to report.

RECOMMENDATIONS

We believe that the educational program carried on by the State Medical Association should

be continued, particularly the Cancer Bulletin and the April edition of the State Journal.

We feel that every effort should be made to try to increase the appropriation for the cancer program within the State. If Senator Henderson's bill is to be enforced, requiring a large segment of the population to have examinations for cancer, then it will be necessary that we have larger appropriations to take care of these patients.

Some thought should be given to the care of terminal patients, probably on a local level if not on a state level.

Again we would like to recommend that each doctor take it on himself as his own duty to be a detection clinic within his own office.

RECOGNITIONS

The Committee wishes to give recognition to the splendid work previously done by Drs. J. P. Chapman and Karl Kesmodel in behalf of the cancer program within Alabama.

Further, we wish to thank Dr. W. H. Y. Smith and Miss Catherine Corley for their untiring work for the control of cancer. We realize that Dr. Smith and Miss Corley have been considerably handicapped by lack of funds and office help.

We wish to thank the various members of the cancer clinics who have so unselfishly given of their time and knowledge in caring for indigent patients of the State through the five state-aid cancer clinics.

Finally we wish to give recognition to Mrs. Lillian G. Meade, Director of the Alabama Division of the American Cancer Society, for her very generous cooperation with the Cancer Committee.

John Day Peake, M. D.
Chairman

John L. Branch, M. D.

Roger D. Baker, M. D.

French M. Craddock, Jr.,
M. D.

J. P. Chapman, M. D.

REPORT, ALABAMA DIVISION
AMERICAN CANCER SOCIETY
MRS. LILLIAN G. MEADE
STATE COMMANDER

As Executive Director of the American Cancer Society, Alabama Division, I am pleased to present this report to the Cancer Committee of the State Medical Association and to the Association as a whole.

April, as you know, is Cancer Control Month, so designated by a special Act of Congress, but the work of the American Cancer Society is on a twelve-month basis. A three-point program of research, service and education is a needed one.

Through our volunteer workers a continuing program of education by radio, newspapers, magazines, outdoor advertising posters, street car and bus cards, distribution of literature, school

programs, film showings, and innumerable talks to civic clubs there has resulted a greater interest in cancer control by the lay public.

Education is not something that can be measured by a yardstick, but I think that you, as doctors, can realize, more than any other group, the awareness of the lay public to the problem of cancer. Reports you give me indicate persons seeking early diagnosis and treatment.

The American Cancer Society is furnishing funds for an extensive research program in Alabama. During the last two years over \$250,000 has been spent on cancer research in this State alone. The beneficiaries are: Alabama Polytechnic Institute, Alabama Association of Pathologists, for Tumor Registry, Highland Baptist Hospital (Birmingham), Medical College of Alabama, and Southern Research Institute.

While the manner of actual treatment of indigent cancer patients is designated by a state law in Alabama, as passed by the Legislature in 1943, transportation of indigent cancer patients, furnishing of bandages and dressings, and drugs for palliative treatment, when requested by the local physician, is a service program adopted by the American Cancer Society.

May I call your attention to the fact that while we are paying bills for medicines for palliative treatment, we are very careful to have the bills signed by the doctor giving the prescriptions before payment is made.

As you probably know, 25c out of every dollar raised by the American Cancer Society is allocated to research, on a national basis, but the Alabama Division has added 24c more to its allocation for research, and is very proud of its ability to do so.

Under the field of education we have in our office, and available for the use of the doctors of Alabama, three medical films: "The Problem of Early Diagnosis"; "Cancer of the Breast"; and "Gastrointestinal 'G. I.' Cancer."

While we have advised medical groups of their availability, there have been very few requests for the use of these films. They are available, without charge, from our office, 907 Ramsay-McCormack Bldg., Birmingham, at any time.

This year a new booklet, entitled "CA," has been made available to the doctors of the United States by the American Cancer Society. The Alabama Division was very proud to be able to include in its budget this year a year's subscription—six issues—to every member of the State Medical Association. The first two issues have already been mailed out. Three doctors were kind enough to write us and thank us for their subscriptions, and expressed their appreciation of this splendid booklet.

The American Cancer Society was very glad to lend its support to the State Health Department in presenting the problem of cancer control to the Interim Committee on Finance and Taxation of the Legislature. At the request of Dr. D. G. Gill, State Health Officer, several mem-

bers of this organization appeared and spoke at the Interim Committee hearing recently. Certainly \$85,000, the present appropriation, is far too little to appropriate for the treatment of indigent cancer patients. Dr. Gill has requested an appropriation of \$150,000 yearly.

As you know, during the month of April the American Cancer Society asks the general public, and that includes the doctors of Alabama, to support its drive for funds. I wish that this year we might set a record of at least a \$1.00 contribution from each doctor in Alabama. It would make a splendid report, and would add considerably to the American Cancer Society's financial status. The demands for money from the American Cancer Society are increasing daily, and while we have not increased our quota for the state of Alabama, it being \$150,000 in 1951, as it was in 1950, we do hope that a little extra money will be given this year to this organization.

During the past year the State Commander has traveled some twenty thousand miles; has attended one hundred and twenty-six (126) meetings to represent the American Cancer Society, and made ninety-eight (98) talks to men's and women's groups over the State. Literally hundreds of talks have been given by doctors and volunteers of the American Cancer Society in addition to this. Civic clubs have been especially interested in the problem of cancer control this year.

If I might make one suggestion it would be that each of our County Medical Societies have a program on cancer during the next year. The American Cancer Society will be very happy to furnish you with any films that would be of assistance.

The American Cancer Society, Alabama Division, is very proud of the fact that it has worked under the supervision of the Cancer Committee of the State Medical Association, and is cognizant of its responsibility in this field. It is also very proud of its splendid cooperation with the State Health Department.

As we have stated before, we feel very strongly that a much better program in cancer control would result if there were a full-time Director of Cancer Control in the State Health Department. In those states where such a director is employed, a better all-round program can be developed.

The American Cancer Society, Alabama Division, earnestly requests your advice, suggestions and help for a better cancer control program for Alabama.

Tuberculosis

This report marks the third year of the existence of the Committee on Tuberculosis which was first appointed by Dr. Paul Jones in 1948. The Committee was created for the specific function of presenting to the Association, at its annual session, the work that is being carried on in Alabama in tuberculosis control and make rea-

sonable recommendations for the continued improvement of such services.

If one is to use, as a yardstick of success, the fulfillment of these recommendations, it will be readily understood just why Alabama is truly the "Here We Rest State." Our complacency and inertia signify that we are satisfied with the slow downward trend of tuberculosis mortality without any energy being expended in the development of an accelerated program.

ALABAMA'S TUBERCULOSIS PICTURE

The fact that tuberculosis is still a problem and a major cause of death in our State is well-borne out by recent statistics and figures which reveal that 819 persons succumbed to the disease in 1950 and that tuberculosis still occupied sixth place in the mortality scale of the ten major causes of death. The disease advanced from 8th place in 1948 to 6th place in 1949, where it still remains in 1950. (See Table No. 1.) The only good reason for a feeling of satisfaction and pride in what has been achieved is the slowly declining death rate which has been steadily declining for a number of years. As a point of comparison in the progress in combating tuberculosis, it is noted that the 1950 rate of 26.8 per 100,000 estimated population is approximately one-third of the death rate in 1930, or twenty years ago. The darker side of this picture is the fact that there were 6,157 known cases of tuberculosis in 1942 as compared with 10,902 in 1950. This increase in case load is attributed to increased diagnostic facilities and better education regarding the disease.

Multiphasic screening programs have uncovered such a greater number of new cases of the disease that the new ratio of beds per annual death has been changed to two and a half beds per annual death. According to the minimum standards and the U. S. average, Alabama should have two and a half beds per annual death, and at the present time we have less than one bed. The yardstick for the control of tuberculosis is as simple as this: 819 (annual deaths) x 2½ (ratio per annual death) = 2,047 x \$2.00 per day State subsidy. At the present time we have only 708 beds for the treatment of tuberculosis which are most certainly inadequate. However, we still

Table No. 1
The Ten Major Causes of Death in Alabama, 1950. With Rates Per 100,000 Population, Compared with Prior Years.

Cause of Death	1950		1949		1945-1949	
	Provisional No.	Rate	Final No.	Rate	Final No.	Rate
Diseases of the heart**	7,919	258.8	7,750	255.1	6,137	205.0
Vascular lesions of central nervous system	3,069	100.3	2,935	96.6	2,609	87.1
Malignant neoplasms	2,860	93.5	2,809	92.5	2,560	85.5
Accidental deaths	1,911	62.5	1,670	55.0	1,848	61.7
Pneumonia, all forms	1,049	34.3	957	31.4	1,145	38.2
Tuberculosis	819	26.8	908	29.9	1,063	35.5
Nephritis and nephrosis**	738	24.1	771	25.4	1,752	58.5
Immaturity***	718	8.8	757	9.0	946	11.7
Homicide	432	14.1	425	14.0	426	14.2
Diseases of the arteries	326	10.6	347	11.4	287	9.6

**Hypertension with mention of heart is included in heart disease totals. Code revised with 1949; not comparable with statistics prior to 1949.

***Rate based upon total number of live births.

feel with a steady declining mortality rate and our present system of hospitalization, the job can be adequately done with 1,500 beds and a guaranteed State subsidy of \$2.00 per day.

Decatur is constructing a new 161-bed sanatorium for District I, and it is expected to be ready for occupancy the latter part of this year. It will replace the existing Morgan County Tuberculosis Sanatorium which has 155 beds, thus increasing the existing bed capacity by only six beds.

DIVISION OF TUBERCULOSIS CONTROL
ALABAMA STATE BOARD OF HEALTH

Tuberculosis control activities of the State Diagnostic Clinics were greatly expanded during 1950 with multiphasic screening, and the results of this expansion were reflected in an increase in the number of individuals x-rayed and the number of new cases discovered. (See Table No. 2.) A breakdown of the figures reveals that 363,972 were x-rayed in the survey, 32,128 in the Diagnostic Clinics, and a total of 3,092 new cases of tuberculosis found.

Table No. 2
Ratio of New cases of Tuberculosis to Number of Individuals X-Rayed by Year 1947-1950.

Year	No. X-Rayed	No. New Tuberculosis Cases
1947	72,736	3,051
1948	199,244	2,773
1949	212,751	2,624
1950	396,100	3,092

Consultation service in the interpretation of x-ray films sent in by private physicians revealed a decrease: 1947—283; 1948—333; 1949—594; 1950—492. This is understandable in view of the expanded activities during the year making consultations unnecessary.

Expanded activities of this Division appear to be short-lived because of recent cuts in Federal funds allocated for this purpose. (See Table No. 3.)

Table 3	
1948	\$152,000.00
1949	150,362.00
1950	148,404.00
1951	144,406.00*

*Exact amount allocated to Alabama this fiscal year. This reduction will be offset somewhat by the x-raying of inductees for the Armed Services.

STATE SUBSIDY PLAN

The State subsidy plan continues from bad to worse, and unless financial aid is forthcoming in the very near future there will be a severe crippling effect on the various sanatoria scattered over the State. State subsidy averaged slightly less than \$1.30 per patient day during 1950, and with an anticipated increase of 75 to 100 beds in 1951 the subsidy is expected to drop to an all-time low of \$1.00 per patient per day. This is an un-

happy therapeutic paradox with funds for tuberculosis hospitalization decreasing and costs for operation soaring to an alarmingly high level. At the present time, minimum costs per patient day average \$4.50 to \$6.00 per day. The table below, No. 4, reveals graphically the seriousness of the subsidy plan and the urgent need for an increased State appropriation to compensate for the deficiency. The State should assume at least half of the cost of a patient's hospitalization, and a minimum of \$2.00 per patient day is advocated which should be assured by an adequate appropriation to take care of additional beds when constructed.

Table No. 4

State Subsidy for Tuberculosis Patients.

Year	Per Diem	Patient Days	Hospital Bed	State Appropriation
1947	1.00	200,632	668	185,000
1948	1.50	217,621	674	300,000
1949	1.30	211,430	674	300,000
1950	1.30	226,548	708	300,000
1951	1.00?	Increase?	Increase?	300,000

Those of us who are actively engaged in tuberculosis work do not feel any sense of optimism with such a deplorable situation staring us in the face, even if the tuberculosis mortality is steadily declining. Provide our sanatoria with sufficient subsidy to cover half of the expenses of hospitalization and a minimum of \$2.00 per patient day and you need not worry about the number of beds needed to control tuberculosis—they will be made available with the State funds already earmarked for tuberculosis hospital construction when Federal funds are again appropriated for State and local matching. This fund when properly matched will total \$4,000,000.

REHABILITATION CENTER FOR TUBERCULOSIS PATIENTS

Another milestone in tuberculosis work in Alabama was passed with the dedication November 29, 1950 of the first building constructed for the purpose of providing vocational training for the arrested tuberculous patient. The building was built on the grounds of the Montgomery Tuberculosis Sanatorium. Named the Christmas Seal Rehabilitation Center, because its cost was financed with Christmas seal money raised by the Montgomery Tuberculosis Association, the building is furnished with equipment for training in the vocations of sewing, typing, furniture repairing, upholstering, beauty shop training, wood work and carpentry.

Although the Montgomery Association is responsible for the building and the equipment, training of patients is under the supervision of the State Vocational Rehabilitation Service.

RECOMMENDATIONS:

1. That the State Medical Association formally request the Alabama Legislature for an immediate increase in the appropriation for State sub-

sidy to raise the per diem from \$1.30 to \$2.00 for the 708 sanatorium beds in Alabama.

2. That the State Medical Association, through its high professional standing, lend all of its resources to the securing of 1,500 beds for the treatment of tuberculosis when Federal funds again become available for matching.

When these two recommendations have been accomplished, the beloved citizens of our great state of Alabama will not die needlessly of tuberculosis.

Paul W. Auston, M. D.
Chairman

A. H. Russakoff, M. D.
L. O. Davenport, M. D.

Medical Service and Public Relations

At an earlier time it was said that there were two phases to the work of this Committee on Medical Service and Public Relations. These were (1) to preserve an atmosphere conducive to the practice of medicine under the free enterprise system and (2) to promote those positive plans which would improve the health and the medical care of the people of Alabama. The past year has seen most of the activity of the Committee in the second phase mentioned above.

As was also pointed out earlier, both of these parts of the program must be kept abreast; and very often external factors dictate the placing of emphasis. To say that our greatest effort has been on the positive plans to improve health and medical care does not mean that the other matters have been ignored. The international situation and the press of more urgent matters have forced our law makers to turn somewhat from domestic and health matters. Before the Korean crisis arose, however, the President presented his Reorganization Plan No. 27. This was in essence the same plan he presented the year before as Reorganization Plan No. 1. Our opposition to this political maneuver was carried out in the same manner as that used before. Again the results speak for themselves. Every Alabama Congressman was present at the time of voting and to a man voted against the proposed plan.

Other matters on the legislative scene have presented themselves from time to time and have been handled by various County Society Public Relations Committees. The President of the Association and the Public Relations Director attended a legislative conference in Atlanta, Georgia in October; and judging from the conversations there, we are abreast of other groups.

The Committee has interested itself in two major problems facing us in Alabama. The first of these is the matter of getting physicians into needy areas. One entire meeting of the Committee was dedicated to this problem. Dr. Harrison, Acting Dean of the Medical College, met with the Committee; and all possible ideas on the subject were thoroughly discussed. This matter of sufficient medical personnel is a dire

need in some Alabama communities and is one the profession must meet and solve. As a result of this discussion the Committee has sent to the Board of Censors the following recommendation on this matter:

WHEREAS, Many communities and even counties in Alabama have only one physician; and illness and death often produce conditions of dire medical need in such communities; and

WHEREAS, Physicians who serve these communities find it impossible to leave their practices to secure much needed rest and to pursue postgraduate study; and

WHEREAS, Dr. Tinsley Harrison, Acting Dean of the University of Alabama Medical College, has recognized this medical need and suggested that doctors taking intern and resident training in the Medical College Hospital might be allowed to practice in these emergencies as a part of their internship or residency; for one to three months spent in general practice would be valuable training for interns, and even longer periods would be valuable for residents taking specialty training; and

WHEREAS, Some physicians might be induced to return to general practice if they became acquainted with its many desirable aspects; and

WHEREAS, The medical profession of Alabama, recognizing its responsibility to supply medical service to people of Alabama, should adopt any reasonable plan to meet this responsibility; therefore be it

Resolved, That the Medical Association of the State of Alabama, in cooperation with the Medical College of Alabama, adopt the following means of meeting this problem:

1. The Medical College of Alabama to enroll a larger number of interns and residents in its teaching hospital.

2. The Medical College to include in its program for training interns and residents as an elective subject periods of training in general practice.

3. Interns who are pursuing their first or second year of training to be available as assistants to physicians in communities where such need arises, or to supply temporarily in communities without a physician—acting under the supervision of designated members of the faculty of the Medical College of Alabama or the chief medical officer of the hospital where the internship is being served.

4. Residents who have completed one year of internship and have met the requirements of the State Board of Medical Examiners to be available for service in communities where no licensed physician is then in practice, or for locum tenens—without jeopardizing their residences.

5. The Secretary of the State Board of Medical Examiners to act as a clearing house for requests for such service and attempt to arrange the service as far as means are available.

6. Those physicians desiring the service of an

intern to act as an assistant to agree to provide facilities for practice, living quarters and a fee of \$200.00 per month.

7. A physician who is the only practicing physician in a community and who wishes to leave his community temporarily or any community which has lost the service of its physician and wishes to secure the service of a resident physician to agree to supply office facilities for practice, the use of an automobile and guarantee payment of \$400.00 a month or above in fees.

8. Any hospital in Alabama approved for the training of interns or residents to include in its program such elective courses in general practice and to make its trainees available for the above service.

The other problem the Committee attempted to help in was the matter of extension of voluntary prepayment health insurance. The Committee was cognizant of the fact that the President of the Association had set up a committee to study voluntary prepayment plans in Alabama. It was also cognizant of the fact that the Hospital Service Corporation had certain matters it wanted to bring to the attention of the profession. Therefore, one meeting of this Committee was devoted to the act of being a sounding board for the various ideas concerning our problems in this field. At the end of this meeting the whole matter was turned back to the President's Committee. Our function of bringing the groups together and of having ideas stated and discussed had been fulfilled. Again this is a matter of great urgency to the profession, and the actions taken by us as a group will have far reaching results.

One problem facing practicing physicians over the State, and a problem that will become more acute as more hospitals are built under the Hill-Burton plan, is the matter of securing technicians and medical aides. There seems to be a great demand for both. Many general practitioners do not have enough need for a graduate technician and could not afford to pay for his services, but this general practitioner does need a medical aide to do some of the more simple office routines. Because of the need for both of these ancillary personnel the Committee offers the following:

WHEREAS, There is an acute shortage of graduate technicians in Alabama and this shortage is likely to increase due to the Hill-Burton program; and

WHEREAS, The Medical College of Alabama now graduates twelve to fifteen technicians each year but with a few more facilities and personnel could train a much greater number; and

WHEREAS, There is a great need for medical aides throughout the State; and

WHEREAS, These medical aides do not need a college degree but do need training in the basic office procedures which can be done under the supervision of the physician; therefore be it

Resolved, That the Medical Association of the State of Alabama request the Medical College of Alabama to increase its personnel and facili-

ties enough to graduate fifty technicians per year; and be it further

Resolved, That the Medical College of Alabama institute a program for the purpose of training medical aides, the Committee on Medical Service and Public Relations to work with the College on determining the subject matter to be covered in the course.

Due to events which have occurred and others which persist on the national scene, the Committee recommends the following resolution for your consideration and adoption.

WHEREAS, We as a people and as a government are faced with a critical international situation wherein we are striving for the very existence of our ideals, philosophies, and our way of life; and

WHEREAS, The national government is spending at an ever increasing rate the money which belongs to the people and which is attained through taxation; and

WHEREAS, There are those in Washington who seem to be happy to use the present situation as a means of furthering their goal of socializing to an ever greater extent the economy and production of our country; therefore be it

Resolved, That the Medical Association of the State of Alabama goes on record as opposing the reckless expenditure of the people's money, the levying of unnecessary taxes for non-essentials, and any form of socialization of any segment of business or industry; and be it further

Resolved, That this Association endorses an economy program for the national government and for the spending by that group; and be it further

Resolved, That a copy of this resolution be sent to all Senators and Congressmen who represent Alabama in Washington.

Because of a situation which arose last year the Committee recommends the following resolution for your consideration and adoption.

WHEREAS, In 1950, without consultation with the American Medical Association, the American College of Surgeons which had previously handled the function of standardizing hospitals entered into negotiations to turn over this function in its entirety to the American Hospital Association, which is a layman's organization not bound by the oath and tradition of American medicine; and

WHEREAS, This move was temporarily thwarted; and

WHEREAS, At the interim session of the American Medical Association, this subject did not reach the floor of the House of Delegates; and

WHEREAS, Rumors of a compromise agreement with the Hospital Association still persists; and

WHEREAS, The effecting of a compromise agreement dividing the responsibilities between the medical profession and the American Hospital Association would be a deadly blow to the medical control of hospitals; therefore be it

Resolved, That the Medical Association of the

State of Alabama requests that the American Medical Association, the organization representative of all physicians, assume full responsibility for the standardization of professional practice in hospitals and that its committee for this purpose include specialists, general practitioners and medical educators; and be it further

Resolved, That the delegates from this Association to the House of Delegates of the American Medical Association be informed of this request and be instructed to work for its adoption by the House of Delegates of the American Medical Association.

Our plans for greatly increased cooperation between the profession and other groups interested in health and medical care were inadvertently lessened to a certain extent. Mr. Aubrey Gates, Field Director of the Committee on Rural Health of the American Medical Association, was to have met with this Committee and representatives of other Alabama groups. However, after getting to Alabama, Mr. Gates had to leave before a meeting could be held because of an accident to his son. This does not mean that we have not been working with other groups. The Health and Medical Care Council of Alabama has not been as active this year as it was at times in the past because many of its past problems were solved and it was felt that a regrouping and redefining of problems was in order. To work on this matter, a Subcommittee on Rural Health has been set up and is now functioning.

Point two of the five-point program presented last year at this time, that is County Care of Indigents, has been explored to the extent of trying to get a summary of the present picture. County Societies were requested to supply information on how indigent care is financed at present. Conditions vary so greatly from county to county that no generalized statement can be made. Some counties allot funds for indigent care; others do not. Indigents of some counties receive help from the Welfare Department only, while others are helped by one or all of civic groups, welfare department and county and/or city commissions. Before any strides can be made on this problem, much more information on each county situation will be necessitated. It is highly likely that no overall plan can be proposed, but it is felt and hoped that means may be found to motivate each county to handle its own problem.

Dr. D. G. Gill has been appointed as the medical representative on the State Civilian Defense Committee. On the request by Dr. Gill, a subcommittee on civilian defense has been set up to work with him on this urgent matter facing us because of the present international situation.

Work with the Alabama Academy of General Practice by the Public Relations Director has continued throughout the year. The interest of this Committee in the work of the Academy is due to its postgraduate education program. The Committee commends the Academy and the Medical College for their work in this field and calls

your attention to the excellent progress that has been made in their postgraduate seminars.

The Committee wishes again to thank the Woman's Auxiliary for its activities in the field of public relations. The Public Relations Director continues to work with this group. The Auxiliary is growing; and because of real purposes for existing, it is making strides. Our work has been greatly augmented by the assistance of the ladies.

During the year the Public Relations Director has continued his contacts with related and lay groups. He has continued to speak whenever an invitation was received. Also much of his time this year has been used in attending meetings of the Association, visiting County Societies, and calling on various individual physicians. These activities were designed for the purpose of motivating and keeping motivated the members of the profession.

Also during the year the Public Relations Director has attended the National Public Relations Conference, a conference on M. D. Participation in Health Councils, the Southeastern Regional Conference on Voluntary Health Insurance, and the Rural Health Conference. During these various meetings it has been possible for him to talk with representatives of other states, learn of their new activities, and evaluate the activities of his office. We, in our work, are abreast of other groups and ahead of many. The problems facing us are about the same as those found elsewhere, and it is believed that we are making headway on them. We shall continue our efforts both within the profession and with other groups and individuals.

During the 1950 fiscal year expenditures have amounted to \$13,644.31. The following is a statement of 1950 expenditures, a proposed 1951 budget, and a statement of present surplus funds.

	1950 Expenditures		Proposed 1951 Budget (Assuming \$16,000 Appropriation)	
Salaries				
Director	\$6,000.00		\$ 6,600.00	
Clerical Assistance	2,100.00	\$ 8,100.00	2,400.00	\$ 9,000.00
Travel Expense				
Committee			200.00	
Director	1,799.89	1,799.89	2,000.00	2,200.00
Printing				
Health Column	238.68		250.00	
Literature and Bulletins	229.50	468.18	300.00	550.00
Office Equipment	261.00		700.00	
Office Rent	960.00		960.00	
Stationery and Supplies	761.58		1,000.00	
Telephone and Telegraph	238.91		350.00	
Radio			50.00	
Postage		812.25	1,000.00	
Art			50.00	
Library		41.20	75.00	
Miscellaneous		201.30	765.00	
Total		\$13,644.31		\$16,700.00
Unencumbered Balance				\$10,691.91
Total				\$27,391.91

SURPLUS ACCOUNT

	Yearly Appropriation and Expenditures	Yearly Surplus
Original Grant	\$ 5,000.00	
Expenditures 4-1-47 to 12-31-47	\$ 365.88	
Expenditures 12-31-47 to 6-30-48	286.69	
Expenditures 7-1-48 to 3-31-49	1,327.76	
Expenditures 4-1-49 to 3-31-50	1,296.99	
Expenditures 4-1-50 to 3-31-51	261.00	3,538.32 1,461.68
1948 Appropriation	14,484.50	
Expenditures less office equipment 7-1-48 to 3-31-49	8,541.22	5,943.28
1949 Appropriation	15,555.00	
Expenditures less office equipment 4-1-49 to 3-31-50	14,782.24	772.76
1950 Appropriation	16,597.50	
Expenditures less office equipment 4-1-50 to 3-31-51	13,383.31	3,214.19
		\$11,391.91

The Committee feels that progress has been made with our program. We realize also that public opinion molds slowly. We believe we are moving forward on a sound footing and request your increased support during the months ahead.

J. Paul Jones	B. W. McNease
Chairman	J. G. Daves
J. P. Chapman	John Day Peake
E. L. Gibson	Ex officio
Joe H. Little	Joseph M. Weldon
F. W. Riggs	Douglas L. Cannon
Arthur Mazyck	D. G. Gill
E. G. Givhan, Jr.	

Nurse Recruitment

Alabama began a program of student nurse recruitment in September 1950. As a result of a survey in 1948 which pointed out the deficit of professional registered nurses, the State Board of Nurse Examiners and the State Hospital Association allocated funds for the project for one year. Approximately \$8,000 was set aside for salary of the main worker, secretarial expense, travel and office supplies.

Miss Frances Raley, a native Alabamian and public health nurse with experience in Alabama, Virginia, Oregon and other parts of the country, was employed to direct the program.

ORGANIZATION

Miss Raley works under the direction of a State Committee with representatives from the Hospital Association of Alabama, Alabama League of Nursing Education, the Alabama State Nurses Association, and the State Board of Nurse Examiners. Also your Committeeman was appointed by Dr. J. M. Weldon, President of the State Medical Association in 1950.

The State Committee meets once a month in the conference room of the Blue Cross Building in Birmingham. The functions of this Committee are:

1. To direct a full-time counselor.
2. To discover the facts which need to be known and interpreted in understanding the problems of nursing education in Alabama.
3. To discover and make known community resources which can be used in the guidance programs of high schools relative to nursing education.
4. To disseminate ideas about ways and means of achieving an effective nursing education program.
5. To provide free materials and publicize materials available that can be used in guidance programs dealing with nursing.
6. To stimulate clubs and organizations to establish scholarship loan funds for basic nursing education and assist worthy girls in getting scholarships in nursing education.

ACTIVITIES

Six district Joint Committees have been appointed by the State Committee. Representative groups on the joint committee include:

1. Woman's Medical Auxiliary.
2. Federated Women's Clubs.
3. Home Demonstration Clubs.
4. Schools—P. T. A.
5. Nursing Associations.
6. Local Hospitals.

These Committees meet about once a month in central locations over the State. Their functions are:

1. Development of adequate guidance services in local schools, making guidance for nursing education an integral part of the school program.
2. Interpretation of nursing opportunities to parents and teachers.

The work of the Committee is advisory in nature and restricts its activities to stimulating and making known the available resources which can be used in our schools to improve guidance in relation to nursing education. The school makes its own decisions as to which resources will be used and how those resources are to be used.

The counselor is available to talk to clubs and groups interested in nursing education and to work with Joint Committees. Conferences have been held with superintendents of schools, high school principals and teachers as a means of interpreting nursing opportunities and community needs. Personal interviews are held with nursing applicants by appointment. Newspaper publicity is an outgrowth of Committee activities. The Committees have stimulated the organization of Future Nurses Clubs, Senior Girl Scout Nurses Aid programs, and Red Cross Home Nursing classes in high schools as a means of guidance.

Attention has been directed towards recruiting all levels of nurses—collegiate, 3-year diploma, and licensed practical nurses—both colored and white.

The State Committee has been organized into

a scholarship committee and will evaluate applications for scholarships and accept funds from clubs to be administered by them.

CONCLUSION

Your Committeeman has not had the opportunity to meet with the State Joint Committee on Nurse Recruitment. However, I followed the activities of this Committee and have been in contact with members of the District Joint Committee in Mobile. Their advertising and promotional work has been fine. In addition to promoting nurse recruitment, this program will also promote better teaching methods.

RECOMMENDATION

1. That the President of the State Medical Association appoint a physician to meet with the State Joint Committee. It would be an advantage if the physician be located near the meeting place of the State Joint Committee.

2. Other physicians be appointed on a committee in each district where a Joint Committee on Nurse Recruitment is active.

3. That the Alabama Medical Association approve the principle of state support of nursing education.

A. D. Henderson, M. D.
Chairman

Coroner System

Following the recommendation of retiring President Frank C. Wilson, President Weldon appointed the following members on the "Coroner's Committee": James R. Garber, Chairman, G. O. Segrest and Marcus Skinner.

The Committee was early impressed with the fact that the matter of coroners and their duties was not entirely a medical problem but one that possessed equally as much interest for and participation in by other groups, especially the various law enforcement agencies.

Therefore, the Committee has collaborated with attorneys and health officers in developing a bill that is more happily constructed on the idea of "Medical Examiner" rather than "Coroner System." A synopsis of the bill, with its proposals, objectives and mechanics is presented as the report of the Committee. It is to be pointed out to the Association that ways and means of financing the proposed plan have not yet been decided upon and that only the substance of the matter, from a medical viewpoint, is here presented.

SUMMARY OF A PROPOSED ACT TO ESTABLISH A STATE BOARD OF MEDICOLEGAL EXAMINERS

1. The Act provides for the establishment of a State Board of Medicolegal Examiners to be composed of the persons holding the following official positions: (a) The State Health Officer, (b) the Attorney General, (c) the President of the Alabama Bar Association, (d) the President of the

Medical Association of the State of Alabama, (e) the Chief State Law Enforcement Officer.

Two additional members are to be appointed by the Governor with the advice and consent of the Senate—one of whom shall be a member of the State Bar and one a qualified pathologist who shall have been practicing or teaching pathology for at least ten years. No member of the Board shall receive any salary or other compensation but shall be reimbursed expenses actually incurred by attendance at meetings.

2. The Board shall provide at the Medical College of Alabama or in close proximity thereto a State office and laboratory and equipment and such branch offices and laboratories in such other localities as may be deemed necessary.

3. The Board may, in the appointment of its professional or clerical staff and in the administration of the duties of such personnel, act jointly with other departments of the State and with cities and counties. Such joint action may include the appointment and compensation of such employees as mutually agreed upon by such governing bodies. Other departments of the State and the governing bodies of cities and counties are authorized and empowered to appropriate moneys, properties or incur such obligation as they see fit to act jointly with the Board in carrying out the provisions of the Act.

4. The Board is empowered to make such rules and regulations as are necessary for the administration of the Act.

5. The Board shall appoint a Chief State Medicolegal Examiner and as many Assistant State Medicolegal Examiners as deemed necessary.

The Chief and each Assistant Medicolegal Examiner shall be a duly licensed physician and surgeon under the laws of Alabama and shall have had at least two years postgraduate training in autopsy and pathology acceptable toward certification in pathologic anatomy by the American Board of Pathology.

6. The Board shall appoint such other professional, technical and clerical personnel as may be necessary for the administration of the duties of the Department. All such personnel shall be subject to the Alabama State Merit System law.

7. The Board may appoint such County or District (including more than one county as it may decide) Medicolegal Examiners on a part-time basis as may be needed. Such County or District Medicolegal Examiners shall possess the same qualifications as the State Medicolegal Examiners.

8. When any person in the State shall die and there is reasonable ground to believe that such person died as a result of violence, by suicide or suddenly when in apparent good health, or when unattended by a physician or within twenty-four hours after admission to a hospital or institution if unattended by a physician within seven days of his admission, or in prison, or in a suspicious or unusual manner or under any of the above circumstances in any institution maintained in

whole or in part at the expense of the State or any of its political subdivisions, any law enforcement officer, or the Superintendent or Medical Director of the institution or the physician called in attendance shall immediately notify the Chief Medicolegal Examiner or an Associate or Assistant State Medicolegal Examiner, or a District or County Medicolegal Examiner of the known facts.

Immediately on notification of such death the Chief Medicolegal Examiner or his assistant shall take charge of the body, make a full investigation, and if in his opinion an autopsy is necessary to determine the cause of death, the same shall be ordered and performed by the Chief Medicolegal Examiner, Associate Medicolegal Examiner, Assistant Medicolegal Examiner or District Medicolegal Examiner.

Whenever a death shall have occurred under any of the circumstances above set forth, the State or District Medicolegal Examiner shall order an autopsy if requested in writing by the prosecuting attorney of the county, by the Chief of Police in cities having a population of 100,000 or over, by the Superintendent of the State Highway Patrol, or by the Attorney General of the State; and all records of the State Board of Medicolegal Examiners shall be available to all such officials, also to attorneys of any party in a proceeding involving the investigation.

9. Whenever in the opinion of the Chief Associate or Assistant State Medicolegal Examiner or District Medicolegal Examiner there is reasonable suspicion of a violation of the criminal or civil law of the State, a full copy of all evidence and an opinion of the investigating Medicolegal Examiner shall be filed with the County Solicitor and the Circuit Solicitor and the Sheriff of the county in which the suspected violation occurred, with the Superintendent of the State Highway Patrol and with the Chief Peace Officer of the city or town in which the suspected violation took place.

10. The Chief Medicolegal Examiner and his assistants and associates, the District and County Medicolegal Examiner and all specialists employed by the Board may be called as witnesses at inquests, before grand juries and at all trials and the records of the State Medicolegal Examiner shall be available as evidence in all courts.

11. On certification by the State Health Officer or County Health Officer that a death may have been caused by some disease endangering the health of the community and that further information as to the cause of the disease is required to institute health control measures, the Chief Associate or Assistant Medicolegal Examiner shall carry out an investigation, including an autopsy, which may be requested by the State Health Officer or County Health Officer.

James R. Garber, M. D.
Chairman

G. O. Segrest, M. D.

Marcus Skinner, M. D.

Health Insurance Plans

The first meeting of the Committee as a whole was held in the State Health Department Building in Montgomery on Sunday, January 21, 1951. Following is the protocol of that meeting:

PROTOCOL OF COMMITTEE MEETING

Committeemen in attendance: Doctors Jones, Conwell, McNease, Meadows, Cowden, Newburn, Douglas, Martin, J. P. Collier, Thigpen, Davis, Segrest, Kennedy, Sid Collier, Gilchrist, Morgan, Garber. State President J. M. Weldon sat in at the conference.

The Chairman presented, as the first topic for discussion, "the method of informing the doctors of Alabama about the health service plan for low income persons." Following the discussion upon this subject the Committee acted as follows:

1. (a) That reprints of an article by Dr. Hamilton McKay, that appeared in the January issue of the Southern Medical Journal, be mailed to every doctor in Alabama, whether a member of the State Medical Association or otherwise.

(b) That an accompanying succinct and short letter be prepared as an enclosure—this letter to emphasize the urgency of doctors informing themselves upon prepayment medical and surgical costs and developing opinions relative to a solution of the problem.

(c) That this publicity be assigned to the Public Relations Committee of the State Medical Association and that funds for its execution be derived from the appropriation granted the Public Relations Committee.

2. That appearances before and talks to County Medical Societies be deferred until the Committee has formulated and adopted definite conclusions and procedures upon the subject before it for study and report.

3. That the members of the Committee use whatever opportunities that may present themselves to make personal approaches to doctors for the purpose of discussing the problems of the Committee assignment.

The next item on the agenda was that dealing with the type of contract for doctors participating in a health service plan for persons of low income. The debate upon this question was full and lively. After considering the various viewpoints that were presented, and the reasons therefor, the Chairman stated that he would appoint a subcommittee to investigate what means may be taken to accomplish the overall objective without the necessity of a contract to be signed by the doctors. The personnel of the subcommittee was announced as being Doctors Martin, Cowden, Douglas, Kennedy, Sid Collier, *Chairman*.

The matter of medical conditions to be covered in the health insurance plan was reviewed. After discussion it was recommended that a subcommittee investigate surgical, traumatic orthopedics, obstetrical, medical services after the 8th

day and dental surgery fees and to report to the full Committee at its next meeting.

No further action by the Committee was taken; adjournment at 1:50 P. M. Next meeting to be held on a Sunday at the State Health Department Building in Montgomery upon call by the Chairman.

James R. Garber
Chairman

N. B.: Only the definite action taken by the Committee has been recorded.

REPORT OF THE COMMITTEE

Preamble

During the past two decades, world changes have been profound and most significant in character. The contributing forces to the socio-economic changes have been of such an impelling nature as to render adjustments most difficult. Uncertainties, compulsion, prejudices and chicanery have dominated the motives that are calculated to influence the lives of this and subsequent generations, to an extent that is unbelievable and decidedly dangerous. In the forefront of these world changes are those forces that attack the practice of medicine and confront its practitioners with extreme seriousness and maybe with annihilation of freedom for the individual physician. Sensing the unbridled and unwarranted efforts to bring about this dissolution of medical practice, according to the traditionally American way, it is comforting and most wholesome to find the medical profession, throughout the nation, alert and active in opposing its unholy and sinister opposition. It is very evident that much good has been accomplished by our fighting legion in the halls of Congress, but none of us must be lulled into the stupid idea that the battle has been won.

The American Medical Association, representing the great family of physicians, will continue to give the political problem its attention. For those of us in the lower echelons a definite, comprehensive and mature program of medical care must be developed and must be made workable. In accomplishing this objective it will be necessary for each of us to provide for the maximum good for the greatest number, even, if in doing so some pet peeves must be altered and modified. Such an orientation does not imply a surrender of fundamental principles or of individual rights. Surely, we of the profession do not want to adopt any plan by which we will do to ourselves the very distasteful and unthinkable things that are in the scheme of bureaucratic and socialistic reformers and promoters. There remains a distinct field for operation open to all of us and it is the work, in this field, by the Committee of the State Medical Association on the study of health service plans that is presented to the doctors of Alabama.

Under date of December 19, 1950 the following communication was forwarded to Dr. J. M. Weldon, President of M. A. S. A. from Dr. D. G. Gill,

Secretary of the State Board of Censors of the M. A. S. A.:

"At a recent meeting of the Board of Censors the future of the Blue Shield Insurance Program was discussed with representatives of the Alabama Hospital Corporation. The Corporation wishes to prepare a new service contract with a revised fee schedule, and with an income level set up in the contract. In other words, if an individual falls within the income level stated his Blue Shield Insurance will be all he is expected to pay. If, however, an individual is in an income bracket higher than that covered, then the physician would be at liberty to assess an additional fee. The fee schedule and the level of incomes to be covered are matters for the medical men of the State to decide. The Board of Censors, therefore, recommends that you, as President of the Association, appoint a committee on which would be representatives of the various specialties, and then this committee, in turn, could sit with the medical representatives of the State Association on the Hospital Corporation Board. The present members on this Board are Dr. C. A. Grote of Huntsville, Dr. J. O. Morgan of Gadsden, Dr. J. E. Moss of Mobile, Dr. J. Paul Jones of Camden, and Dr. J. P. Collier of Tuscaloosa. The combined group should be prepared to present to the Association at its April meeting a recommendation concerning fees and income levels. It would then be incumbent on the Hospital Service Corporation to set up a program that is actuarially sound to make this Blue Shield Program work. The Board of Censors feels very strongly that the Blue Shield Program must be made to work in this State since it is our best answer to compulsory governmental insurance. At the present time the Blue Cross side of the Hospital Service Corporation is carrying the deficit from the Blue Shield Program, and this cannot continue indefinitely.

When your committee has been selected, if there is any way in which this office can help in the way of notification or arranging for a meeting, etc., please call on us."

President Weldon, according to the instructions from the Board of Censors, appointed the following Committee to sit with "the medical representatives of the State Association on the Hospital Corporation Board":

Dr. James R. Garber, *Chairman*, representing Obstetrics.

Dr. James A. Meadows, representing X-Ray.

Dr. Hughes Kennedy, Jr., representing Pediatrics.

Dr. H. Earle Conwell, representing Orthopedics.

Dr. Sid W. Collier, representing Gynecology.

Dr. Francis M. Thigpen, representing Surgery.

Dr. John W. Davis, representing Urology.

Dr. Grady Segrest, representing Medicine.

Dr. Philip P. Gilchrist, representing E. E. N. T.

Dr. George Newburn, Jr., representing General Practice.

Inasmuch as President Weldon had appointed a committee to investigate and study prepaid

health insurance policies, the members of said Committee were included in the membership of the Committee as a whole. These members are Doctors John A. Martin, *Chairman*, A. M. Cowden and Gilbert F. Douglas. Consequently, the entire Committee of the whole is composed of the Presidential special appointees, the medical representatives of the State Association on the Hospital Corporation Board and the members of the Committee for the investigation and study of prepaid health insurance policies.

Report of the Subcommittee appointed at the first meeting follows:

REPORT OF SUBCOMMITTEE

A meeting of the Subcommittee was held in Birmingham, at Hospital Service Corporation of Alabama headquarters, on Sunday, February 4, 1951. Present were: Doctors John Martin, Douglas, Kennedy, and Sid Collier, *Chairman*. Doctor Garber and Mr. Singleton sat in with the subcommittee.

1) The Subcommittee debated, at length, the immediate urgency of a health service plan for persons of low income and while the definite impression was maintained that sometime in the future such a provision may have to be adopted, yet, for the present, attention was directed only to a continuance of the present indemnity policy, with some alterations being indicated and advisable.

2) The Subcommittee urges that on the face of the policy be written the necessary phrase, in prominent letters, whereby the beneficiary will be informed that the policy indemnifies and does not guarantee medical costs in toto.

3) The Subcommittee endorses the regulation of having policy holders present the Federal withholding tax form W-2 as a guide to the physician in making additional professional charges, over and above the benefit the physician will receive from Blue Shield.

4) Irrespective of the number of physicians rendering service on an individual during any one hospital admission, the Subcommittee unanimously and strongly endorses a clause in the policy contract that will allow indemnity payment to each and every physician rendering such professional services, including the attending physician, the medical and surgical consultants.

5) The Subcommittee recommends that Blue Shield increase premium rates by 25%, as a minimum, so as to implement benefits paid to the physician.

6) In the conference between the Subcommittee and Mr. H. F. Singleton, Manager of Blue Shield, two very significant and important facts were established.

a) The widespread abuse, by physicians, of Blue Shield insurance.

b) The very unique position of the physician in promoting the sale of Blue Shield insurance.

The Subcommittee was amazed to hear specific reports of abuses by physicians and by patients,

with the connivance of the physician, and it condemns the flagrant violation of the implied confidence reposed in the physicians under the premises discussed.

The Subcommittee does not infer that physicians are to turn salesmen in behalf of Blue Shield; but suggests that endorsement be given the plan and explanation of the protection offered be given those seeking information.

Schedule of Benefits

The Subcommittee endorses the current (revised March 1950) schedule of benefits with the following exceptions:

1) Medical fee of \$5.00 a day beginning on 4th day with patient in hospital.

2) Obstetrical fee increased to \$75.00 for delivery, not including prenatal and postpartal care.

3) In view of the fact that it may require the same amount of skill to accomplish a closed reduction as an open reduction, the same fee be applied in both instances.

4) The present schedule of benefits for dental (oral) surgery seems adequate; however, the Subcommittee recommends that the dental surgeon be made eligible for compensation.

Sid Collier, M. D.
Chairman

The Committee of the State Medical Association, appointed to investigate and study prepaid health insurance policies, submitted its report to the Committee as a whole and is here reproduced:

This Committee was appointed to investigate:

1. Prepaid insurance policies offered by Blue Cross (a non-profit company) and profit insurance companies. 2. Failure of Blue Cross to cover a greater number of people. 3. The amounts of benefits available in all policies. 4. The possibility of developing a uniform contract service policy. 5. Or other improvements to prepaid plan of insurance.

Several meetings have been held and individual study of the above problems has been done.

FINDINGS

1. Many commercial insurance companies are offering liberal and reliable voluntary insurance policies. Many unreliable companies are selling many policies in this State. Many of the better companies are changing or cancelling policies when losses show up in any area. The State Bureau of Insurance controls commercial insurance practices.

2. The Blue Cross was brought into existence by a special Act of the Legislature of Alabama and the Commissioner of Insurance has little control over it. Blue Cross is non-profit and has operated on approximately 11 or 12% of its intake which compares very favorably with other states in the U. S. Since 1936 it has accumulated a one million dollar reserve fund by saving 1% of its premium intake. The Blue Cross policy has

paid all of its claims and entails a minimum of paper work.

3. Failure of Blue Cross to cover a greater number of people seems to be an administrative problem. More agents would increase overhead and increase premiums. The medical profession, the hospitals, and probably nurses, dentists and technicians who are in allied professions apparently have made little or no effort to sell prepaid voluntary insurance.

4. The amounts of benefits available by Blue Cross are as liberal or more liberal than other commercial policies seen. They also compare favorably with the contracts of the Tennessee and Georgia plans. Several items can be recommended for fee changes, namely: (a) medical fee; (b) obstetrical fee; (c) fracture fee.

5. A service contract involves: 1. rural people, 2. urban people, 3. white people, 4. non-white people, 5. family groups, 6. single people, 7. unemployed groups, 8. physically handicapped, 9. service men's families, 10. senile dependents, 11. chronic illnesses, 12. physicians, 13. hospitals, 14. insurance companies.

6. The economic angle as given by the U. S. Department of Commerce and Bureau of Census on current population reports (Series P-60, No. 6, Feb. 14, 1950) show: a. The income of the average (median) family for 1948 was \$3,200. The Census Bureau gives the average (median) income (A. P. Feb. 17, 1950) for 1949 as \$3,100. b. Out of 38 and ½ million families in the U. S., 17 million earn under \$3,000 per year (1948). c. Approximately one half of the families with incomes under \$2,000 were headed by farmers or by laborers, two of the lowest paying occupations and only one-tenth in the highest paying occupations. d. For the country as a whole, the median income of white families and individuals was \$3,000, twice that of the non-whites. e. Even when the non-money income of the farmers is excluded they still remain in the low income groups.

Alabama is preponderately rural, thus our population largely falls into the lower income group and lower occupational scale group.

THE PROBLEMS

1. Commercial profit making insurance companies have to vary their policies according to profit or loss. (a) Submit to control of State Bureau of Insurance. (b) Have no doctors as directors.

2. Blue Cross and Blue Shield are: a. Non-profit in their charter. b. Have been largely directed by members of the M. A. S. A. and our state hospitals. c. The control of the Blue Shield has been offered to the physicians for handling of fees and contracts.

3. The service contract is not suitable to this committee or most of the members of M. A. S. A. we have contacted.

4. The indemnity contracts of commercial insurance companies and the Blue Cross have

served well the public and the doctors. This pioneer work should not be wasted but should be the basis for a better and more comprehensive plan.

The Blue Cross and Blue Shield offer a maximum of benefit to the policy holder out of each premium dollar. Proper support of its administration by doctors and hospitals would offer more benefits without increase in premiums and a greater number of policies in force.

5. Policy holders of Blue Cross and Blue Shield should be informed that the policy indemnifies and does not guarantee medical costs in toto. A withholding tax form W-2 or some similar identification can be used to establish an income level in the levying of additional fees.

6. Some indemnity should be made to each and every physician rendering professional services. Such a contract will probably require an increase in premium rates. If so, this should be worked out by physicians and the Blue Cross and Blue Shield so that the proper adjustment of fees will not produce an unsurmountable administrative problem and stifle the sale of contracts.

7. The abuse of both physicians and hospitals in many instances which uses up funds which might be used for wider benefits to the policy holders and a more equitable adjustment of fees for physicians.

IT IS RECOMMENDED

1. That the indemnifying type of prepaid voluntary insurance be continued and that conscientious efforts and support of the physicians of the M. A. S. A. be given to rectify the inequalities and injustices to both policy holder and physician. 2. That the service contract has no particular advantages in benefits to the present indemnifying contract and is not acceptable to the physicians of this State as an improvement but tends to be a finale in a social and economic problem of a rapidly changing world. 3. That abuses of prepaid voluntary insurance by physicians and hospitals which reflect on our honesty and integrity of our physicians be stopped if even a reviewing board is necessary. 4. That the M. A. S. A. make a continuing study of this problem with the idea of making improvements each year. Monies for professional aid outside our Association may be necessary. 5. That concerted effort be made by physicians and hospitals to sell more voluntary prepaid insurance, such as stickers on bills, leaflets, ads, etc.

We find that some 2,500 companies are licensed to sell insurance in our State, but about twenty-five companies comprise the principle volume of business sold.

The hospitals report that the administration of this business is a heavy task, due to the number of companies operating, and with so many different types of coverage.

We also find that many companies sell several coverages in the same policy—hospital, doctor, loss of time and even life insurance benefits.

Being interested only in doctors fees, we have ignored the other features and studied the various state and county plans in operation in the United States.

Since the fee schedules vary greatly in different locations, higher in some states in urban areas and less in rural areas, we have tried to arrive at an average scale for fees.

We feel that there should be some agency in the State, composed of doctors or their appointees, to endorse or not endorse the various policies offered for sale to our people and to see that the insured understands what coverage he is entitled to in his policy. He should also be made to understand what fees the doctor is paid by the insurance company.

We suggest that all companies that do not pay the doctor direct, like the Blue Shield, should issue checks payable jointly to both the doctor and the insured, to prevent any misunderstanding or misappropriating of the doctors fees.

We note from the various plans that practically every state allows \$50.00 for delivery and some few allow extra for prenatal and postnatal care. The Michigan plan allows only \$40.00 for delivery plus office fees.

Likewise, the majority of state plans pay \$3.00 per day for medical service with 3 or 4 days deductible. Most all pay \$100.00 for an appendix and \$150.00 for a hysterectomy.

We, therefore, suggest that the Blue Shield continue to write its policies with approximately these fee rates and present premium charges, in order to compete with the commercial companies.

We also recommend that the Blue Shield be requested to issue, whenever they find the demand for such, a policy that will enlarge the benefits to \$75.00 for delivery, \$125.00 for appendectomy, \$5.00 per day for medical service, with four days deductible; to pay all consultants on the case, to give proportionate benefits for other services and to increase the premium rate on this better policy 25%. The details can be worked out with a committee and the Blue Shield.

We heartily recommend that all the doctors in the State, all things being equal, give preference to the Blue Shield company, and speak in its behalf whenever opportunity affords an occasion to do so.

The cheaper policy is recommended for the lower income groups and the slightly more expensive policy to those who can afford it.

We strongly recommend a grievance committee, on a county level, as a stabilizing force in the observance of our obligations.

The Committee feels that its report is far from complete.

Some of our requests for data were ignored, several replies dealt in generalities and gave no specific information, others gave generous help in procuring information.

We have the entire fee schedules of the Tennessee, Georgia, California, Maryland, Michigan,

Kentucky and Illinois plans. Several commercial companies sent copies of their contracts and some states offered to send representatives in person. We made five personal contacts where plans are in successful operation. The Blue Shield supplied valuable data.

The Blue Shield has, by far, the greatest volume of business and has competition by commercial companies in every state. All the states reporting feel that this rivalry insures the policy holder the greatest possible benefit in his insurance contract, at the lowest possible cost.

We still hope, however, that the State Medical Association will accept our report only as a working basis, and permit further study to determine the final decision as to the best methods of handling prepaid health care in Alabama.

John Martin, M. D.
Chairman

Gilbert F. Douglas, M. D.
A. M. Cowden, M. D.

The following is the protocol of the second meeting of the Committee:

PROTOCOL OF COMMITTEE MEETING FEBRUARY 25, 1951

The second meeting of the State Committee on Health Service Insurance Plans was held in Montgomery on Sunday, February 25, 1951. The meeting convened at 10:30 A. M.

Committeemen in attendance: Doctors Meadows, Sid Collier, Garber, Davis, Douglas, Segrest, Gilchrist, McNease, Grote, Martin, Cowden. State President Weldon sat in at the conference.

The first action taken was approval and adoption of the protocol of the first meeting held on January 21, 1951.

The Chairman then read two communications from Dr. A. C. Jackson, President of the Hospital Service Corporation of Alabama, pertaining to the action of that Corporation in regard to the control of Blue Shield policies by the doctors of the State. A resolution adopted by the Hospital Service Corporation of Alabama on February 12, 1951, was presented and is herewith quoted:

"An Executive Committee consisting of the officers of the Corporation, the six (6) doctors chosen and designated by the Board of Censors of the State Medical Association as members of the Board of Trustees of the Corporation, together with five (5) other members of the Board of Trustees, shall be elected annually by the Board of Trustees at its regular annual meeting and shall hold office for one (1) year and until their respective successors are elected."

The Chairman discussed the personnel of the whole Committee as there seemed to be some confusion in this connection. Letters from the Board of Censors to the President and from the President to the Chairman were read. It is clear that the membership of the Committee, as originally constituted, was intended and President Weldon, present at the conference, confirmed the

committee personnel. Those present accepted the explanation and understand that the entire Committee comprises the names of those in attendance at the meeting on January 21, 1951, as well as the two members who were absent at that meeting; viz., Doctors Grote and Upchurch.

The Subcommittee report on further study of the present indemnity type of health insurance was next introduced. Those present voted unanimously for the following clauses of the report:

1) The Subcommittee debated at length the immediate urgency of a Medical Health Service Plan for persons of low income and while the definite impression was maintained that sometime in the future such a provision may have to be adopted, yet, for the present, attention was directed only to a continuance of the present indemnity policy, with some alterations being indicated and advisable.

2) The Subcommittee urges that on the face of the policy be written the necessary phrase, in prominent letters, whereby the beneficiary will be informed that the policy indemnifies and does not guarantee medical costs in toto.

3) The Subcommittee endorses the advisability of having policy holders present the Federal withholding tax form W-2 as a guide to the physician in making additional professional charges, over and above the benefit the physician will receive from Blue Shield.

4) The Subcommittee unanimously and strongly endorses a clause in the policy contract that will allow indemnity payment for each reasonable consultation in complicated cases, including the attending physician, the medical and/or surgical consultant.

5) In the conference between the Subcommittee and Mr. H. F. Singleton, Manager of Blue Shield, two very significant and important facts were established.

a) The widespread abuse, by physicians, of Blue Shield Insurance.

b) The very unique position of the physician in promoting the sale of Blue Shield insurance.

The Subcommittee was amazed to hear specific reports of abuse by physicians and by patients, with the connivance of the physician, and it condemns the flagrant violation of the implied confidence reposed in the physicians under the premises discussed.

The Subcommittee does not infer that physicians are to turn salesmen in behalf of Blue Shield; but suggests that endorsement be given the plan and explanation of the protection offered be given those seeking information.

6) The Subcommittee recommends that each County Medical Society appoint a grievance committee for the purpose of investigating and adjusting any misunderstandings or abuses as an outgrowth of financial misunderstanding between doctors, patients and insurance companies. Should a County Medical Society not appoint a grievance committee, the complainant shall refer

the matter to the State Board of Censors unless a grievance committee on the state level has been appointed.

The report of the State Association Committee to investigate insurance companies selling pre-paid health insurance in Alabama was presented and by unanimous vote the report was received as read.

Chairman Martin of this Committee consented, with the approval of President Weldon, to allow the report to become a part of the report to be made by the larger Committee for the Study of Health Service Insurance Plan. At the meeting of the Association in April his Committee will pass its place on the program, for making a report, for the report of "our" Committee.

Doctor Cowden presented a report that was voted to be received. This report was supplemental to and further amplified specific items in the report by Chairman Martin.

The Committee adopted the following motion: That the Chairman appoint a subcommittee of six members, with the Chairman as an ex-officio member, to further study the matter of additional insurance policies offering greater benefits to the policyholder. As an example: A service contract policy and indemnity policies (one for low income group with cheaper premium rates and one for higher income group with increased premium rates and more benefits to the individual).

The Chairman named the following as the Subcommittee: Doctors Sid Collier, *Chairman*, McNease, Grote, Meadows, Douglas, Kennedy.

James R. Garber, M. D.
Chairman

Following is the protocol of the committee meeting held on April 1, 1951:

PROTOCOL OF COMMITTEE MEETING
APRIL 1, 1951

The third meeting of the Committee was held at the State Health Department Building in Montgomery on Sunday, April 1, 1951.

Committeemen present: Doctors Segrest, Douglas, Thigpen, McNease, Morgan, Jones, Conwell, J. P. Collier, Upchurch, Meadows, Kennedy, Gilchrist, Sid Collier, Newburn, Garber.

Approval of the protocol of the second meeting of the Committee was unanimously approved.

The report of the Subcommittee appointed at the second meeting of the Committee was presented. Upon motion, duly seconded, the Committee endorsed items 2 and 3 of the report, but rejected item 1 by a majority vote.

The Chairman requested an opinion on the advisability of mailing each doctor in the Association a copy of the report prior to the annual session of the Association. The Committee was unanimous in its endorsement of this plan.

The Chairman then presented the material to be incorporated in the report of the Committee to be mailed and to be presented to the State As-

sociation at its annual meeting in Mobile on April 19-21, 1951.

James R. Garber, M. D.
Chairman

MEETING OF SUBCOMMITTEE
SUNDAY, MARCH 11, 1951

The special Subcommittee, appointed by Doctor James R. Garber on Sunday, February 25, 1951, held its first meeting at 10:30 A. M. Sunday, March 11, 1951, in the Hospital Service Corporation Building, Birmingham, Alabama.

Committee members present: Dr. J. A. Meadows, Dr. Gilbert Douglas, Dr. Hughes Kennedy, Dr. Sid Collier. Ex-officio member present: Dr. James R. Garber. Observing: Mr. H. F. Singleton, Manager of Blue Cross and Blue Shield. Committee members absent: Dr. McNease and Dr. Grote.

The Purpose of the Meeting

To study further the matter of the Blue Shield policies. The Committee discussed at length the service plan and the possibility of two grades of indemnity policies with minimum and maximum benefits. The majority of the Committee, realizing that the service plan for the low income group is inevitable, submits to the whole Committee the following recommendations:

Service Health Plan

Item 1. A majority of this Committee endorses a contract service health plan for the low income group with income of \$1,500.00 for an individual and \$2,500.00 for a family.

Indemnity Policies

Item 2. The Committee, believing that two indemnity policies with minimum and maximum benefits is not practical at this time, advises that only one such indemnity policy be written.

Item 3. The Committee further advises that the present contract be improved, including adjustments of rates and fees, the final details of this to be worked out by the Board of Directors of the Blue Shield Hospital Service Corporation of Alabama after recommendations have been submitted by this Committee. This recommendation was unanimously passed by the Committee.

Sid W. Collier, M. D.
Chairman

CONCLUSIONS

(1) This study was assigned to the Committee on a date that offered too short an interval of time before the annual meeting of the Association for a complete and final report.

(2) Whatever conclusions this report may embrace, it must be borne in mind that actuarial studies will determine their ultimate application to the problem under study.

(3) The Committee recognizes the advantages of pursuing policies calculated to meet the threats of socialized medicine, yet it also recognizes the

necessity of safeguarding physicians from assuming the role of expanded and unwholesome paternalism.

(4) The Committee is of the opinion that the Association should not adopt any new plan or alterations of existing plans of health insurance at this annual session, but urgently advises that further time and study be taken to develop equitable terms of insurance for policy holders, physicians and insurance companies.

(5) The Committee recommends that grievance committees on a state and county level, wherever such a committee is practical in a County Medical Society, be established.

For the Committee
By James R. Garber,
Chairman

Report of the Secretary-Treasurer

Douglas L. Cannon
A. M. A. MATTERS

MEMBERSHIP DUES

Much misunderstanding continues to exist regarding American Medical Association dues, the payment of which is necessary for affiliation with that body. The dues for 1951 are \$25, which includes annual subscription to the weekly Journal of the Association, and are not receivable unless payment was made in equal amount for 1950, the first year they were in effect. If one is delinquent for that year, the delinquency must be removed before credit can be had for 1951. Only three groups are exempt from American Medical Association dues and they are: (a) members for whom payment would constitute a financial hardship; (b) members in actual hospital or post-graduate training for not more than 5 years after graduation from medical school; and (c) members who have retired from active practice. In each instance the exemption must be declared by the County Medical Society, and those exempted must be excused also from state and local dues. In the case of military service, those called to active duty before July 1 of a given year are liable for one half year American Medical Association dues (\$12.50). If called to active duty after July 1, they are liable for total annual membership dues for that year. Members are excused from payment of American Medical Association dues while on active duty after the year in which they are called.

FELLOWSHIP DUES

This subject of dues cannot be dismissed without reference also to Fellowship dues, which, for 1951, are \$5 and are exclusive of membership dues. On receipt of bill for such dues from the American Medical Association, they are payable directly to that body in Chicago and not through the office of the Secretary of the State Medical Association as in the case of membership dues. Many members of our organization have applied for Fellowship and are Fellows of the American Medical Association, and it is they who have the

supplementary amount of \$5 to pay. Fellows may substitute one of the specialty journals published by the Association for the Journal of the American Medical Association if they care to do so.

AMERICAN MEDICAL
EDUCATION FOUNDATION

In the columns of the State Medical Journal attention has been called to the American Medical Education Foundation that has been established as a non-profit corporation to receive and distribute contributions for the benefit of the medical schools of this country. Each member of the profession is urged to demonstrate his support of this new undertaking by contributing promptly and generously. It is the hope of the American Medical Association that County Medical Societies will appoint an individual or a committee to further the plan locally, to the end that adequate support for medical education may be had from voluntary sources. While this Association has not been approached for a grant from its treasury, other Associations have remitted and it is likely our organization will be requested to participate. Contributions should be addressed to the American Medical Education Foundation, 535 N. Dearborn Street, Chicago 10.

AFFAIRS OF OUR ASSOCIATION

MEMBERSHIP

The membership of the Association, as enrolled April 1, 1951, is 1,785. Of the state's 1,969 physicians, 90 per cent are identified with the Association, the same as a year ago.

THE FIFTY YEAR CLUB

At this meeting Certificates of Distinction are to be awarded 26 physicians who have practiced their profession for fifty years and therefore become members of the Fifty Year Club. It had been expected to award Dr. George Edward Spruill his certificate but he died on March 1. A posthumous presentation will be made his family. Those to receive certificates tomorrow morning are:

John H. Blue	Montgomery
Lynn M. Boyd	Montgomery
James L. Bryan	Greenville
Henry N. Coleman	Ft. Deposit
Robert T. Comer	Birmingham
Henry A. Darby	Athens
Duncan P. Dixon	Talladega
James W. Gramling	Gadsden
Ambrose T. Grayson	Huntsville
Thomas F. Huey, Sr.	Anniston
Leonidas F. Jackson	Panola
Giles W. Jones	Parrish
James J. Killgore	Wadley
Robert A. Martin	Pell City
Walter J. Maxwell	Sheffield
Andrew D. McLain	Salem
Samuel T. Miller	Yantley
Lawrence H. Moore	Orrville
Lorenzo D. Parker	Andalusia
William D. Partlow	Tuscaloosa
Henry W. Robinson	Livingston
Lee Wright Roe	Mobile

Howard J. Sankey.....	Birmingham
Henry J. Savage.....	Gadsden
Edgar M. Scott, Sr.....	Birmingham
Frank R. Wood.....	Heflin

DEATHS

year and to remain in effect for the duration of the emergency. It is the hope of the Secretary that these members of the Association may have the State Medical Journal without cost during their absence, provided they furnish their changes of address.

Forty-four (44) members of the profession have died since the report of 1950 was rendered. The high honor we can pay them is to read their names one by one, and publish them in the proceedings of this session. In the number were Life Counsellors E. D. Bondurant and P. V. Speir, and Active Counsellor J. S. Tillman. Dr. Bondurant, born in 1863 and graduated from the University of Virginia in 1883, was President of the Association in 1906 and had been a Life Counsellor since 1914. The complete obituary record follows:

Baumhauer, C. A.....	Mobile
Bealle, J. S.....	Tuscaloosa
Bondurant, E. D.....	Mobile
Brindley, T. B.....	Hartselle
Brooks, H. L.....	Rt. 2, Phenix City
Chapman, C. H.....	Andalusia
Chisolm, J. S.....	Selma
Day, Edward.....	Maplesville
Dickey, E. W.....	Hazel Green
Fitts, Alston.....	Tuscaloosa
Hail, R. A.....	Robertsdale
Hodge, E. K.....	Wedowee
Jackson, J. A.....	Sulligent
Jordan, W. M.....	Birmingham
Kimbrough, W. E.....	Chatom
Kracke, R. R.....	Birmingham
Kyser, J. A.....	Madison
McInnis, W. R.....	Clio
Minot, W. D.....	Tuscaloosa
Parnell, C. N.....	Maplesville
Peterson, J. J.....	Mobile
Petrick, A. C.....	Fairhope
Ransom, W. W.....	Birmingham
Rawls, V. Q.....	Red Level
Russell, C. H.....	Huntsville
Shaw, R. E.....	Whatley
Smith, F. C.....	Bessemer
Snoddy, E. A.....	Aliceville
Speir, P. V.....	Greenville
Spratt, R. D.....	Livingston
Spruill, G. E.....	Ethelsville
St. Peter, M. A.....	Sylacauga
Swann, J. C.....	Wedowee
Tatum, S. C.....	Center
Thrower, B. F.....	Enterprise
Tillman, J. S.....	Clio
Tucker, E. W.....	Fairfield
Underwood, A. J.....	Spruce Pine
Van Sant, J. W.....	Piedmont
Watkins, J. Harold.....	Montgomery
Watwood, J. A.....	Arab
Wikle, J. O.....	Madison
Williams, W. C.....	Bridgeport
Yarbrough, J. F.....	Montgomery

REMISSION OF DUES

Efforts of the Gorgas Hall of Fame Committee, formed for the purpose of presenting the achievements of Dr. William Crawford Gorgas for election in 1950 to New York University Hall of Fame for Great Americans, were successful. This great honor having come to Alabama, it is now necessary for the Committee to raise an estimated \$5,500 for the bust and the tablet of Dr. Gorgas to be placed in the Hall of Fame. Our Association has been asked to make a contribution toward the amount needed, and it is recommended that it do so. In this connection, there is in the Alabama National Bank, Montgomery, \$86.18 remaining from a fund collected for portraits of Dr. W. D. Partlow and Gov. Chauncey Sparks given the Medical College of Alabama some years ago. By action of the Association, and with whatever additional sum the Association may wish to appropriate, this residue of \$86.18 could be used for the purpose stated.

During World War II, dues of members and Counsellors in service were remitted. It is recommended that the same policy be pursued in the present situation; to be effective in the current

GORGAS BUST
IN HALL OF FAME

Efforts of the Gorgas Hall of Fame Committee, formed for the purpose of presenting the achievements of Dr. William Crawford Gorgas for election in 1950 to New York University Hall of Fame for Great Americans, were successful. This great honor having come to Alabama, it is now necessary for the Committee to raise an estimated \$5,500 for the bust and the tablet of Dr. Gorgas to be placed in the Hall of Fame. Our Association has been asked to make a contribution toward the amount needed, and it is recommended that it do so. In this connection, there is in the Alabama National Bank, Montgomery, \$86.18 remaining from a fund collected for portraits of Dr. W. D. Partlow and Gov. Chauncey Sparks given the Medical College of Alabama some years ago. By action of the Association, and with whatever additional sum the Association may wish to appropriate, this residue of \$86.18 could be used for the purpose stated.

RECREATION OF COMMITTEE
ON INDUSTRIAL MEDICINE

A year ago the Association's Committee on Industrial Medicine was discontinued. It seems indicated now that it be revived and it is so recommended, its members to be three and to be appointed by the President of the Association, one for a term of one year, one for 2 years, and the third for 3 years, vacancies occurring because of expiration of term to be filled as now provided by ordinance of the Association. For whatever they may be worth to the recreated committee, objectives of a similar committee in another state are set forth herewith.

1. To promote awareness by the medical profession, employers, and employees of the value of conserving occupational health.
2. To promote determinations of occupationally connected hazards in the state, and resources and methods for their control.
3. To promote development of increased personnel and material resources for study and control of occupationally connected health hazards.
4. To promote professional and lay education in and adoption of all accepted methods of reducing the frequency and severity of occupationally connected disabilities.
5. To promote formulation and a clear understanding of the proper scope and functions of occupational medicine, and promote clarification of the responsibilities and relationships between private and occupational practice including the promotion of early recognition of nonoccupational disorders and the encouragement of their correction.
6. To promote improved relationships between

the medical profession and all agencies, groups or persons interested in occupational health in the state.

7. To promote improvements in all legislation affecting the health of employed persons.

8. To promote adoption of similar activities through cooperating committees in the medical societies of the several counties in the state.

PRESIDENTIAL APPOINTMENTS

As delegate and alternate, respectively, in the House of Delegates of the American Medical Association, President Weldon appointed Drs. C. A. Grote and G. A. Denison, their terms to expire December 31, 1952.

Committee appointments were made as follows: Medical Service and Public Relations—E. L. Gibson and Joe H. Little; Mental Hygiene—F. A. Kay; Maternal and Child Health—A. E. Thomas; Cancer Control—John Day Peake; Prevention of Blindness and Deafness—Karl Benkwith; Postgraduate Study—Cabot Lull; Anesthesiology—E. Bryce Robinson; and Tuberculosis—A. H. Russakoff. Dr. R. R. Kracke, who was named to the Committee on Physician-Druggist Relationships, is deceased.

Special committees set up by the Association at its 1950 session have presidentially-appointed personnel as follows: Nurse Recruitment—A. D. Henderson; On the Coroner System—J. R. Garber, Grady Segrest and Marcus Skinner; and On Voluntary Insurance Plans—John A. Martin, A. M. Cowden and Gilbert Douglas, Sr.

STATUS OF COUNSELLORS-ELECT

At the last meeting of the Association, two members—James M. Crawford and Arthur F. Wilkerson—were elected Counsellors. They have qualified as required by the Constitution and should be added to the Roll of Active Counsellors when the revision of the Rolls is made on Saturday morning.

OFFICERS TO BE ELECTED

Officers to be elected at this session are a President, a President-Elect (as provided for in the constitutional amendment of 1950), a Vice-President for the Southeastern Division, to succeed Dr. E. L. Gibson whose term has expired; and two Censors for five years to succeed Drs. John W. Simpson and B. W. McNease, whose terms expire.

There are to be elected, also, 17 Counsellors: *From the 1st Congressional District*, 1. The second term of seven years of W. A. Stallworth has expired. *From the 2nd*, 3. The first terms of seven years of John L. Branch and E. F. Leatherwood have expired. L. V. Stabler's second term of seven years has expired. *From the 3rd*, 1. J. S. Tillman is deceased. *From the 4th*, 1. C. W. C. Moore's second term of seven years has expired. *From the 5th*, 2. The first terms of seven years of R. A. Foshee and A. C. Gipson have expired. *From the 6th*, 2. C. T. Acker's second term of seven years has expired. W. C. Golden's first term of seven years has expired. *From the 7th*, 3. E. T. Brown's second term of seven years has expired. R. B. Dodson's first term of seven years has expired. M. S. White is considered as hav-

ing resigned. *From the 8th*, 2. The second terms of seven years of J. O. Belue and C. A. Grote have expired. *From the 9th*, 2. The first terms of seven years of H. W. Allgood and Dan C. Donald have expired.

APPOINTMENTS TO BE MADE

Committees presenting vacancies because of expiration of term of members are: Medical Service and Public Relations (F. W. Riggs and Arthur Mazyck), Mental Hygiene (J. S. Tarwater), Maternal and Child Health (T. M. Boulware), Cancer Control (John L. Branch), Prevention of Blindness and Deafness (R. J. Grayson), Postgraduate Study (Ralph McBurney), Physician-Druggist Relationships (R. E. Cloud), Anesthesiology (Sid W. Collier) and Tuberculosis (L. O. Davenport).

It will be a responsibility of the next President to make these appointments, to name a successor for the unexpired term of Dr. R. R. Kracke, deceased, on the Committee on Physician-Druggist Relationships; and to designate a delegate and an alternate to the American Medical Association to succeed Drs. J. Paul Jones and D. G. Gill, respectively, whose terms will expire December 31, 1951.

ASSOCIATION FINANCE

According to custom, the accounts of the Association for the year 1950 have been audited by Crane, Jackson and Wilson, Certified Public Accountants, Montgomery, and the audit constitutes the concluding pages of this report.

The Officers and Members,
The Medical Association of The State of Alabama,
Montgomery, Alabama.
Gentlemen:

We have completed our examination of the Cash Accounts of the Treasurer of The Medical Association of The State of Alabama for the calendar year 1950, and have prepared the following statements:

Exhibit "A": Summary Statement of Cash Receipts and Disbursements for the Calendar Year 1950.

Exhibit "B": Statement of Cash Disbursements for the Calendar Year 1950.

Exhibit "C": Securities Owned at December 31, 1950.

Our examination included the tracing of all recorded cash receipts to the record of deposit of funds, as indicated by the bank statements produced for our examination. All bank checks paid during the period were examined as to amount, signature and endorsement, and were vouched to the record of checks issued. Footings of the books of original entry were proved.

Securities owned by the Association, and listed in Exhibit "C", were verified by physical examination, in company with Dr. Douglas L. Cannon, on January 26, 1951, at the Safety Deposit Vault of the First National Bank of Montgomery, Alabama.

Respectfully submitted,
Crane, Jackson and Wilson,
By H. C. Crane, C. P. A.

Exhibit "A"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
SUMMARY STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS
FOR THE YEAR ENDED DECEMBER 31, 1950

Cash Balance at January 1, 1950:

Checking Account—First National Bank	\$18,030.21	
Savings Account—First National Bank	1,335.63	\$19,365.84

Cash Receipts:

Association:

County Dues	\$21,330.50	
Counsellors	2,460.00	
Roster of Association	58.00	
American Medical Association Dues	150.00	
Refund to Medical Services and Public Relations Committee	151.63	
Commission for Collection of 1950 Dues for American Medical Association	285.50	
W. A. Dozier, Jr.—Refund	83.50	
Miscellaneous (Phone Call)	1.60	
Savings Account Deposit	100.00	
Interest on Savings Account:		
1949	\$13.38	
1950	14.09	27.47
		\$24,648.20

Journal:

Advertising	\$11,418.24	
Non-Member Subscriptions and Sales	152.45	11,570.69
		\$36,218.89

Cash Disbursements (Exhibit "B"):

Association	\$ 6,573.41	
Medical Service and Public Relations Committee	14,234.60	
Journal	13,787.39	34,595.40

Excess of Receipts over Disbursements During 1950. \$ 1,623.49

Cash Balance at January 1, 1950. 19,365.84

Cash Balance at December 31, 1950. \$20,989.33

Represented By:

Checking Account—First National Bank	\$19,526.23	
Savings Account—First National Bank	1,463.10	\$20,989.33

Exhibit "B"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
STATEMENT OF CASH DISBURSEMENTS
FOR THE YEAR ENDED DECEMBER 31, 1950

Association:

Salary—Douglas L. Cannon, M. D.	\$ 600.00	
Annual Meeting:		
Guest Speakers	\$ 392.11	
Hotel Expense	131.82	
Badges	121.02	
Operation Sound Equipment	100.00	
Miscellaneous	18.42	763.37
Printing and Stationery	2,515.87	
Postage	135.00	
Expense of Delegates to American Medical Association	225.00	
Attorney Retainer Fees and Expense	1,307.84	
Post-Graduate Seminar	350.00	
Deposit to Savings Account	100.00	
L. Kilpatrick for Services to American Medical Association	200.00	
Dues Collected for American Medical Association	150.00	
Guaranty Bond—Treasurer	50.00	
Auditing Fee	50.00	
Committee Meeting on Maternal and Child Health	35.00	
Refund of Federal Insurance Overpayment	27.50	
American Medical Association Directory	20.00	
Newspaper Ads—C. D. White Case	28.56	
Lettering Fifty Year Club Certificate	8.50	
Rent on Safety Deposit Box	6.00	
Bank Exchange and Charges	.77	\$ 6,573.41

Medical Service and Public Relations Committee:

Salaries (Net):		
W. A. Dozier, Jr.	\$ 5,203.20	
Technical Assistant	1,782.57	
Clerical Assistant—January only	183.40	\$ 7,169.17
Payroll Taxes		1,083.30
Construction of New Cabinets		240.21
Travel Expense—W. A. Dozier, Jr.		2,000.00
Printing and Stationery		1,073.04
Postage and Express		1,038.63
Rent		900.00
Office Supplies and Expense		351.32
Telephone and Telegraph		269.63
Dues and Subscriptions		40.70
Miscellaneous		68.60
		14,234.60

Journal:

Salaries:		
Douglas L. Cannon, M. D.	\$ 600.00	
Luette Kilpatrick	1,020.00	
William W. Wilkerson, M. D.	300.00	\$ 1,920.00
Printing and Mailing Journal		11,818.39
Clerical Assistance		10.00
Refund of Money Order In Error		39.00
Total Disbursements		13,787.39
		\$34,595.40

Exhibit "C"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
SECURITIES OWNED
DECEMBER 31, 1950

Quantity	Type	Date of Issue	Purchase Price	Redemption Value 12-31-50	Increase	Date of Maturity	Maturity Value
7	\$500.00 Series "F" U. S. Government War Savings Bonds Numbered D191057F to D191063F inclusive	7-1-43	\$ 2,590.00	\$ 3,013.50	\$ 423.50	7-1-55	\$ 3,500.00
6	\$500.00 Series "F" U. S. Government War Savings Bonds Numbered D220060F to D220065F inclusive	1-1-44	2,220.00	2,544.00	324.00	1-1-56	3,000.00
4	\$500.00 Series "F" U. S. Government War Savings Bonds Numbered D274010F to D274013F inclusive	6-1-44	1,480.00	1,670.00	190.00	6-1-56	2,000.00
3	\$500.00 Series "F" U. S. Government War Savings Bonds Numbered D385709F to D385711F inclusive	5-1-45	1,110.00	1,213.50	103.50	5-1-57	1,500.00
11	\$500.00 Series "F" U. S. Government War Savings Bonds Numbered D386331F; D386367F to D386369 inclusive; D386371F; D386373F to D386376F inclusive; D386378F; D386379F	11-1-46	4,070.00	4,268.00	198.00	11-1-58	5,500.00
3	\$500.00 Series "F" U. S. Government War Savings Bonds Numbered D677782F to D677784F inclusive	5-1-49	1,110.00	1,117.50	7.50	5-1-61	1,500.00
2	\$1,000.00 Series "F" U. S. Government War Savings Bonds Numbered M1510584F; M1510-585F	5-1-49	1,480.00	1,490.00	10.00	5-1-61	2,000.00
1	\$10,000.00 Series "F" U. S. Government War Savings Bond Numbered X355045F	5-1-49	7,400.00	7,450.00	50.00	5-1-61	10,000.00
			<u>\$21,460.00</u>	<u>\$22,766.50</u>	<u>\$ 1,306.50</u>		<u>\$29,000.00</u>

Committee of Publication

Douglas L. Cannon, Chairman

The monthly circulation of the Journal on December 31, 1950 was 2,025 copies, 1,741 of which went to members of the Association, 93 to exchanges, 84 to advertisers and advertising agents, and the remainder to nonmember subscribers and the files of the Association.

Advertising and miscellaneous Journal receipts in the calendar year 1950 amounted to \$11,570.69. Cost of printing and distributing the Journal was \$11,818.39, disbursements exceeding receipts by \$247.70.

Transactions, also, were furnished the members of the Association, and the cost of this item was \$1,067.51.

Report of Vice-President Gibson

Southeastern Division

During this past year the Southeastern Division of this Association has held one meeting, this being at Troy on March 15, 1951. The Pike County Medical Society was our host on this occasion. A number of most interesting discussions on different medical problems were given by doctors in the district. Too, we were delighted to have with us Dr. Tinsley Harrison of the Medical College of Alabama who gave us a most informative scientific discussion. He later presented to us a picture of the present situation of the rural areas in regard to adequate medical care and doctors, and also the plans which the Medical College is considering to better the present state of affairs.

Also present with us were Dr. J. Paul Jones, Chairman of the Committee on Medical Service and Public Relations, who gave us a most interesting talk; and Dr. Douglas L. Cannon, our Secretary, who spoke to us about the public health work in this State.

Following the program, our hosts entertained us most delightfully with a banquet.

In a previous report to the Association, I questioned the value of these divisional meetings, but I am now of the quite definite opinion that they are worth while. They are helpful in developing a congenial spirit of unity among the doctors in the various counties, who are given the opportunity to meet and to associate with their colleagues in the neighboring counties and to discuss with them problems which they have in common. This factor alone would make the meetings worth the effort.

Then, too, the scientific discussions given at these meetings represent hours of preparation on the part of those giving them and are summaries of the latest knowledge of diagnosis and treatment of the disease or condition under discussion. We gain much in scientific knowledge from these meetings.

We have found that using, to a large extent,

the younger men of the profession on these programs is advantageous. In a great many cases these young men are more completely informed regarding the newest methods in medicine than those of us who have had more years of experience. Too, I believe it is well to give them an opportunity to address a group of other doctors—you might say, to display their wares. Both the speaker and the listeners are benefited.

I haven't too much to report regarding my work as Vice-President during the past year. I have not visited all of the counties in the Division, but I can report that nearly all of the County Societies are active, the exceptions being the most thinly populated counties with very few doctors.

Your Vice-President has attended the meetings of the Committee on Medical Care and Public Relations which have been held during the past year.

In conclusion, I should like to express my appreciation for the most helpful cooperation I have received during my term of office. It has been a pleasure to work with you in this capacity, and I know that you will accord to my successor the same loyalty and support you have given me.

Report of Vice-President Daves

Northwestern Division

There have been no unusual activities this year in the district.

The so-called national emergency has of course caused considerable unrest among all the doctors. The youngsters have had their plans changed by the fact of impending calls to military duty. The older men have had to face up to this fact; that increased and prolonged services would be required of them as a result of these unsettled affairs. This would seem to lessen the ardor and cool the enthusiasm of the profession, but not so, for doctors are trained and experienced in the ability to meet any crisis with no let down in the amount and character of the attention they render suffering humanity.

Two meetings were held during the year with excellent attendance and attention. The programs were arranged so that many phases of district and statewide interests could be explained to those present. The social hours were delightful, relaxing and beneficial.

The first meeting was held in Decatur on September 28, 1950 by invitation of the members of the Morgan County Medical Society who left nothing undone in making everyone glad he came.

The meeting was called to order promptly at 3 P. M. The Rev. Nelson Guthrie, Pastor of Central Methodist Church offered the invocation, after which Dr. Claude Lavender, President of the host Society, made us feel at ease and welcome by his address. At this time it was our very great pleasure to present the President of the Medical Association of the State of

Alabama, Dr. J. M. Weldon, who brought greetings and best wishes from the State at large. Then Dr. Frank Chenault told us in his inimitable way about the General Practitioner—a man of many relationships. Dr. Jack R. Jarvis explained the facts and functions of the Division of Mental Hygiene in the State Health Department. Next we were very delightfully and profitably addressed by Dr. James R. Garber on the questions of Uterine Inertia, Tetanic Uterus and Ring Formation. Gallbladder diseases were comprehensively discussed by a relatively new man to our district, Dr. Arthur Chenoweth. By this time Dr. Tinsley Harrison had arrived and most graciously told us many valuable things about some heart diseases.

For the next few minutes a lively round table discussion was indulged in to the gratification of all. After these formalities ceased everyone enjoyed an hour or so of genuine Morgan County hospitality, which included many items, not the least of which was a good steak dinner. During this procedure we were given some facts and progress notes on Blue Cross and Blue Shield by H. F. Singleton, Executive Director of Hospital Service Corporation of Alabama, and Bill Dozier, Jr., Public Relations Director of the State Medical Association.

The second meeting was set for January 31, 1951, with Colbert and Lauderdale counties acting as co-hosts, but on that date grim winter had paralyzed almost all means of transportation and communication resulting in postponement till March 14th, when again there was considerable snow and ice but not sufficient to prevent the execution of the program as planned. When one County Society goes all out and does such an excellent job of showing its guests a good time, you should have been at Florence to partake of the goodness and graciousness in hospitality those fellows showed.

Again, at the appointed hour, the meeting assembled and stood reverently while the Rev. O. T. Foster, Pastor of Central Christian Church of Florence, invoked the blessings of the Master Physician on our coming together. When Dr. Welty, President of the Colbert County Medical Society sat down, no one felt the least bit unwanted or ill at ease. Three excellent papers were presented by local men: Dr. P. S. Trousdale told about Tumors of the Thyroid, Adult Lesion in the Young was reported by Dr. Wyatt C. Simpson, while Dr. Harry G. Brown reviewed Urology, as it relates to the activities of the general practitioner. It was indeed a pleasure to learn the functions and objectives of the Alabama Heart Association from its very able chairman, Dr. Edgar Givhan. Then Dr. Tom Boulware gave us a very vivid picture of Obstetrics as reflected by the state of Alabama through the Northwestern Division. Dr. Boulware and Dr. Givhan will everlastingly hold a warm spot in our hearts for the loyalty manifested by their appearance on January 31 amidst almost unendurable weather.

One could not paint a word picture of how

vividly and impressively Dr. Champ Lyons described his version of Cancer of the Stomach, surely the work of a master.

By this time everyone was ready for the next item on the program which consisted of an hour's increasing convivialities and laughs from the exchange of stories and renewal of acquaintances. The meal had every thing a doctor's appetite could desire. Between courses, various important personalities were introduced, which revealed a hitherto unknown secret: that Dr. Givhan was a great reciter of the Night Before Christmas!

Another very interesting character in the person of a Doctor Davison from England who is now with TVA told us about the situation existing over there under governmental medicine. From his description of their results we do not want any of it. From his statements of activities leading up to their present predicament we shall have to stop things here now or else before long we shall be equally involved.

One should have accomplished more this year, but one didn't.

Report of Vice-President Treherne

Southwestern Division

I find it extremely difficult to find words to express to you my gratitude and appreciation for the honor you have conferred upon me by electing me Vice-President of the Southwestern Division of the State Medical Association. I cannot help but feel a great sense of inadequacy in being called upon to fill this office and follow in the footsteps of Dr. W. R. Carter, who found it necessary to relinquish his office because of ill health. I am sure that the entire State Association will join me in hoping and wishing for Dr. Carter's speedy recovery. In the meantime I have attempted, in my small way, to carry on his great work.

During the past year I have spent most of my available time in acquainting myself with the duties of my new office and learning more about the organization and functions of the State and County Medical Societies. Due to the burden of my own practice, inadequate time, and miles of travel involved, I regret to say that I have visited with only about one half of the County Societies in the Division, and all of these have been in the southern half of the Division. I hope to visit with the counties in the northern part of the Division during the coming year.

My observations in visiting these County Societies have been both encouraging and discouraging. Encouraging in that some of the Societies have good meetings with good programs once each month or in some cases every other month. This is commendable because these Societies are really doing good work. Discouraging in that other Societies meet only once or twice a year or, in some cases, only when a special meeting is called. In most cases, however, this

is understandable since these counties have only very few doctors, widely scattered and each burdened with a large rural practice. In these cases there is very little incentive to meet regularly since it is practically impossible to arrange and conduct good scientific programs with such a small number of doctors to attend. For this reason, during the coming year, I plan to attempt to stimulate interest in County Societies getting together and holding bicounty or tricounty meetings as regularly as possible. This I am sure will create more interest and will make for better and more interesting county meetings.

I regret very much that I have been unable to visit with the County Societies in the northern half of the Division. However, according to the reports I have received, I am sure that, for the most part, they are carrying on their activities in good style. This is especially true with regards to the Black Belt Post-Graduate Medical Seminar. I hope that this section of the Division will continue this good work and I am anxious to meet with them in the near future.

It is with much gratification that I have noticed the increasing interest by the doctors of this Division in the Alabama Chapter of the American Academy of General Practice. Since we have so much rural area and so many general practitioners in this Division, I feel that the organization of the Academy should be of great interest to us. I intend to assist in promoting this organization as much as possible and I hope that the doctors of the Division will become even more interested in it.

As has been the custom for the past several years, only one district meeting was held. This was in Evergreen on October 26, 1950. The Conecuh County and Monroe County Medical Societies joined in acting as host for this occasion. A very interesting scientific program was presented to a fairly large attendance. Sixty-five (65) doctors registered for the scientific program.

Immediately following the scientific program the doctors and their wives were entertained with a delicious barbecued chicken supper at the Evergreen Country Club. This was thoroughly enjoyed by all. A total of about one hundred (100) were present, including doctors, wives and guests.

In conclusion, I would like to thank my many friends for their fine spirit of cooperation and assure you all that it has been an honor and pleasure to work with you during this past year. I only hope that we, the Southwestern Division and the entire State Association, can make greater advances during the coming year.

Report of Vice-President Finney

Northeastern Division

The Northeastern Division experienced an essentially uneventful year.

Despite the threat of war only seven physicians (approximately) from the Division were

called into military service. However, a much larger number hold a commission in the Officers Reserve Corps and are anticipating active duty orders. Eight physicians were lost through death. Some four new members have been added to the roll in the Northeastern Division. Currently, about 323 physicians are in practice.

A meeting of the Division was held in Anniston on January 25, 1951. Arrangements for the meeting were made by a committee composed of members of the Calhoun County Medical Society with Dr. G. G. Woodruff serving as Chairman. The Vice-President wishes to record his deep appreciation to Dr. Woodruff and the members of his committee for their work in preparation of this excellent meeting. A luncheon was served in the recreation rooms of the Coca Cola Bottling Company from 12:30 to 1:30 P. M. The scientific program got underway at 2:00 P. M. The meeting adjourned at 5:00 P. M. The attendance was relatively poor in that only forty-six members were present. Among the visitors were Dr. Douglas Cannon and Mr. William Dozier from the State Association and Dr. J. G. Daves of Cullman, Vice-President of the Northwestern Division.

The Vice-President of the Northeastern Division wishes to submit for consideration the following recommendations:

1. Division meetings of the Medical Association of the State of Alabama are totally void in terms of administrative, fiscal and political significance. They are held as interim sessions for the purposes of scientific presentations and the promotion of more friendly professional relationships among the constituents of the respective divisions. It would appear that larger, thus fewer, divisions would permit vastly superior scientific programs, stimulate an actual increase in attendance and promote close professional relationship among members of a larger segment of the State than possible under the current system. Physicians in this period of such rapid advance in medical knowledge are eager to attend well rounded, full discussions of scientific problems. The reading of periodicals, journals and textbooks is often insufficient. In many instances one must hear the "pros" and "cons" of a subject elucidated by one with experience and must be allowed to participate in informal round-table discussions in order to apply intelligently much of that which is new in a given field of medicine. The condition of roads and mode of travel have changed appreciably in our State since the establishment of the four-division system. Currently good roads traverse the State. Travel may be accomplished easily and rapidly to any section. For the purpose of improving the level of scientific presentations and the promotion of professional relationship among members of larger segments of the State it is recommended that the Northeastern and Northwestern Divisions be merged into a single division, designated as the Northern Division of the Medical Association of the State of Alabama, and, further, that the Southeastern and Southwestern Divisions be

merged into a single division designated as the Southern Division of the Medical Association of the State of Alabama.

2. Apparently there is no provision for defraying expenses incurred incident to division meetings. In most instances the County Medical Society acting as host to the division meeting has assumed the deficit for plates reserved by members who failed to attend and other minor expenditures. Counties with few physicians quite understandably have been reluctant to assume the obligation of host to a division meeting. For several years each county has received annually from the state of Alabama a fund which is to be used for purposes of education. In order to encourage County Medical Societies with small membership to serve as host to division meetings it is recommended that each County Medical Society be assessed a fair and pro rata share to be paid from its education fund toward expenses incurred in a meeting of the division in which it is held in membership.

Message of the President

Members of the Medical Association of the State of Alabama and Guests:

For the State Association, I want to thank the Mobile County Medical Society for its invitation to return to Mobile. On many occasions the membership has voiced its pleasure of meeting in this convention city. The Medical Society has always been a gracious host. Though the entertainment was not announced, the Association has no doubt that this part of the program will be well taken care of.

I want to thank each and every member of the State Association for his vote of confidence and the honor conferred on me last April in electing me to be your presiding officer for the ensuing year. This is an honor of which my fondest expectations had never permitted me to dream.

Multiplicity of duties and conflicting dates have prevented my appearing at as many sectional meetings as I would have liked to have attended. First, I participated in a joint meeting of the Baldwin and Escambia County Medical Societies at which I spoke on the *Organization, Constitution, and By-Laws of the Association*. We had a nice attendance and quite a number of visitors, all of whom enjoyed the gracious hospitality of our hosts.

I was very much impressed with the amount of work and responsibility of the Board of Censors when I attended one of its meetings in Montgomery. This is an experienced, dignified body of our membership which serves faithfully year after year without thought of remuneration. Its sole aim and ambition is to serve well the health of the people of the state of Alabama and the best interests of the Association. It was educational to meet with the Board of Censors and to realize the magnitude of its functions.

I attended many meetings of the various Standing and Special Committees of the Association

throughout the year, including several meetings of the Medical Service and Public Relations Committee, Cancer Control, Education Extension Program meeting at Tuscaloosa, M. A. S. A. Auxiliary, Northwestern Division annual meeting, a meeting of the Southeastern Division of the AMA legislative committee in Atlanta, and many meetings of the joint committees on the health insurance plan.

Your President reappointed many members of the various Standing Committees whose terms expired last year. I also made other appointments as follows:

Nurse Recruitment Committee: Andrew Henderson.

Coroner System Investigation: James R. Garber, *Chairman*, G. O. Segrest, and Marcus Skinner.

Voluntary Insurance Plan: John A. Martin, *Chairman*, Gilbert Douglas, and A. M. Cowden.

During the year the Board of Censors requested the appointment of a committee composed of members of the various specialties and a general practitioner to work with the Hospital Committee on the Blue Shield Insurance Plan. On this committee the following were appointed: James R. Garber, *Chairman*, James A. Meadows, Sr., Hughes Kennedy, Earle Conwell, Sidney Collier, G. O. Segrest, F. M. Thigpen, Philip Gilchrist, John W. Davis, Jr., and George W. Newburn, Jr.

You will read in the Transactions of the meeting the reports of the Vice-Presidents and the various Standing Committees. Only in this way will you be able to realize how much activity is going on in our organization. Your Vice-Presidents have done a fine job. They have held one or more meetings with good attendance and interesting programs. One of our Vice-Presidents has a recommendation for the redistribution of the number of Vice-Presidents and their duties, the details of which you will hear in the Board of Censors' report Saturday morning. Your Vice-Presidents are efficient in promoting an active interest within each of the County Societies and in doing a good deal of work in postgraduate education and public relations. They are to be commended for their efficient and tireless efforts.

Our Cancer Control Committee Chairman, Dr. J. P. Chapman, resigned and John Day Peake was appointed to succeed him. Dr. Chapman agreed, however, to remain on the Committee in the capacity of a member and we are certainly glad we did not lose his services. At the annual meeting of the Cancer Committee, which I was privileged to attend, I enjoyed the discussions and deliberations very much, and for the first time was informed as to the nature and volume of the work which they are accomplishing. This Committee, like many others, needs more money to expand its program. The importance of this work we all well understand. Mrs. Lillian G. Meade was extolled for her endeavors and was retained for another year with a well-deserved increase in salary.

The Committee on Maternal and Child Health has continued its wonderful work during the year. Through its faithful efforts we now have a prenatal clinic in all but a few counties in the State. It is hoped that soon there will be one or more in each county.

For the consolation of the incoming President: If you have problems on which you will want and need help, our able Secretary, Dr. Cannon, has all the answers. He is an invaluable asset to the organization, willing and able to help at all times. I appreciate Dr. Cannon, his ability, willingness, and invaluable help in conducting the affairs of the Association during my tenure of office.

Your President has a word of praise for the work done by the Postgraduate Committee. I would recommend the continuation and extension of this program. I would like to submit to the Association and this Committee that an investigation be made of the feasibility of adopting the plan now used in Indiana for carrying on postgraduate work; that is, seminars are conducted at the medical colleges over long distance telephone on dates previously announced to the county medical societies which have aligned themselves with the program. The membership of each society assembles at its meeting place and is connected directly to the medical college by telephone and, on the proximal end, by a loud speaker or amplifier. In this way the program is delivered simultaneously to as many of the county societies as desired. The cost of the service to each society is not less than ten dollars and not more than thirty dollars for each seminar. Illinois is carrying out its program of postgraduate teaching and public relations via television, which is probably even more effective where this service is available.

Your Chairman of Medical Service and Public Relations, J. Paul Jones, is a human dynamo. He realized the necessity of doing a thorough job in these parlous times, and I know of no one who has been more conscientious in his efforts, or who has done a better job or accomplished more than he. Mr. Dozier, who is Director of Public Relations in Alabama, has been a valuable asset in this work. He has kept you informed as to impending legislation in Washington and pertinent points of interest to the Association. He is of material assistance to the Woman's Auxiliary in directing its public relations work. I would not have you minimize the efforts and achievements of your Auxiliary. It is doing a commendable work.

I believe any effort that we can make toward furthering the cause of good public relations should be given due consideration. Your President very strongly recommends a grievance committee in each county and a state grievance committee also. It is unfortunate that we have the occasional complaint that a member of our profession has taken advantage of his patients either through negligence or by overcharging. This reflects on the profession as a whole and is unfair and unjust. We, members of the Medical As-

sociation, should not stand idly by and tolerate the criticism heaped upon us because of the indiscretions of the few. A grievance committee could render a valuable service in promoting better relations between doctor and patient.

You are all aware of the plan of the AMA to aid medical education instead of allowing the government to make grants to the various medical schools. The AMA fears that if medical schools accept grants from the government then the government will dictate the policies of the schools and, in fact, control medical education. The Supreme Court has already handed down the decision that "what the government subsidizes, it must control." Your AMA is doing a big job for you in fighting your battles against the effects of socialized medicine. The least you can do for your own protection is to pay your AMA dues of twenty-five dollars. When the report was turned in, 98.3 per cent of the physicians in Colorado had paid their dues.

The State Medical Association of California gave to the AMA for the furtherance of medical education a check for the sum of \$100,000, and many other sizeable checks have been offered by medical associations of the various states and by individuals. The AMA has requested that each member pay \$100 per year for the support of needy medical schools.

At the Mid-Century White House Conference on Child and Youth, meeting in Washington, D. C., December 3rd to 7th, 1950, Mr. Ewing presided. Plans were made and machinery set up in detail for a workshop, from national level down to the county level, extending into schools and even into day nurseries. Mr. Ewing never failed at any time to keep uppermost in the minds of the assemblage the lack of proper health facilities for the execution of their program and suggested subvention for all of this work in all of its branches, even to the extent of subsidizing individual families whose incomes were not sufficient to keep them on the level of the middle income class. If the program adopted by this Mid-Century Conference, with all of its ramifications, is finally put into operation, the cost to taxpayers will be billions of dollars annually.

It seems that the plan of the administration is to tax the citizenry until it no longer has the will to resist. The Federal Government is "We the People." It cannot give anything without first taking it away from the people. In this connection, I would propose the formation of a Medical Committee of Alabama for Better Government. On account of the unique set-up in Alabama, I recommend that the activity of this committee be restricted to national problems and legislation. Unless each of you receives your newsletter from the AMA and from the Association of American Physicians and Surgeons, you probably have very little conception of the activities in Washington in behalf of socialized medicine. When our last Congress convened, there were twenty-two separate bills introduced affecting medicine in one form or another. It behooves this body to keep in close contact with the activities in Wash-

ington through the AMA and to apprise our senators and representatives in Congress frequently of the attitude of the medical profession of Alabama toward such legislation.

It has been suggested that when a President's term has expired, he is more or less relegated to oblivion, thereby discarding the knowledge and judgment gained by his experience with the Association. This might be a source of valuable material for such a committee as I have suggested. If consistent with the wishes of the Association, and if you think well of this plan, I would suggest that this committee be composed of the last five or ten retired Presidents, whichever is your pleasure. I suggest this limit because of a larger number being unwieldy. It has been my experience that a large committee accomplishes less than a smaller one. Your President would propose that the senior member of this committee, relative to his term as President, should act as chairman. When the next retiring President has been added to the committee, the senior member would be automatically retired.

Your President would like to express his appreciation for the more or less recent organization and activity of the Academy of General Practice which is one of the greatest forward steps that has been taken by members of a medical group within recent years. I would like to emphasize my interest in increasing the number of doctors in rural communities. In this connection, I am glad to see some of the hospitals in Alabama, including our own City Hospital in Mobile, establishing a residency in General Practice; and I am of the opinion that with the inducement of Hill-Burton hospitals being built in many rural communities, there will be a greater incentive for doctors locating in small communities.

In keeping with customs of other organizations, for example Rotary International, your President would suggest that it might be fitting for the Association to adopt the policy of presenting to each retiring President a past-president's pin with the seal of the Association, the letters P-R-E-S, and the year of service stamped on the face of the pin. Pins would be given to all Past-Presidents living, and each year the incoming President would present such a pin to the retiring President. If this is consistent with the wishes of the membership, I so recommend.

Your Special Committees for the study of Blue Shield and voluntary health insurance plans have had a tremendous task. There are more than two thousand different forms of voluntary health insurance written in Alabama. To reach an agreement on a satisfactory insurance plan would require more time than this Committee has had at its disposal. The work of the joint Committees, therefore, is incomplete. On account of the time and effort that these men have already expended, your President recommends that this Committee be continued intact until its work is completed.

Your President is keenly interested in efficiency and economy of operation. If I am correct-

ly informed, there is a plan on foot for building several large tuberculosis units in the State, thereby multiplying the cost of administration and operation of tuberculosis hospitalization. Illinois built many such units as a cost of millions of dollars, and after an expensive experiment have abandoned most of these units and have concentrated on a much fewer number. Why cannot we profit by their experience? I have written to the Governor of the state of Alabama and requested that he select a committee of State Senators and Representatives to visit Magee, Mississippi, to inspect the wonderful one unit tuberculosis hospital of that State. I know of no more efficiently and economically operated hospital in the country. We are all taxpayers and if we can concentrate our efforts in one unit, it would be a tremendous saving of money and would certainly lend to greater efficiency of supervision and operation. I think it behooves those of us who are familiar with medical care to take a more active part in the spending of our money and the administration of our hospitals.

Again I wish to thank you for the very great honor you have bestowed upon me and the privilege of serving as your President during the past year.

Scientific Program

Dr. Harry V. Herndon, Florence, read a paper on Amebiasis in Northwest Alabama.

Management of Ocular Injuries in Acute Emergencies was discussed by Dr. William B. Clark of New Orleans.

Dr. Champ Lyons detailed Professional Responsibilities in Catastrophe Management.

Drs. Joe H. Little and William B. Patton, Mobile, gave a paper on the Diagnosis and Treatment of Subarachnoid Hemorrhage.

Miscellaneous Business

Dr. J. R. Garber, Birmingham, introduced a resolution relating to the statute of limitation in medical practice suits, and it was referred to the Board of Censors.

Dr. Hughes Kennedy, Jr., Birmingham, proposed an amendment to the ordinance of the Association entitled Notice of Time and Place for Assembling of Delegates and Counsellors for Purpose of Making Nominations for Vacancies in the College of Counsellors, and it, too, was referred to the Board of Censors.

Mr. Phil Hudson, Opelika, fraternal delegate from the Alabama Pharmaceutical Association, was presented.

Afternoon Session, Thursday, April 19

2:00 P. M.

Dr. E. L. Strandell, Brewton, read a paper entitled *The Acute Abdomen as Seen in General Practice*.

Dr. William J. Dieckmann, Chicago, discussed the *Placental Stage and Postpartum Hemorrhage*.

Consideration of *Hematuria* was dealt with by Dr. John W. Davis, Jr., Montgomery.

Use of *Blood Fractions in General Practice* was the subject of the paper presented by Dr. Louis K. Diamond of Boston.

Presentation of the *Curriculum for Training in Clinical Medicine of Medical Students and Residents* was by Dr. Tinsley R. Harrison, Birmingham.

Dr. Ralph M. Clements, Tuscaloosa, discussed *Trends and Treatment in Ear, Nose and Throat Allergy*.

Social Events

The Mobile County Medical Society entertained the doctors and their wives at a fish fry and barbecue at the Mobile Country Club from 5:00 to 8:00 P. M.

Second Day

Friday Morning, April 20

9:00 A. M.

Dr. John F. Comer, Birmingham, read a paper on *The Juvenile Amputee*.

The *Diagnosis and Management of Pancreatic Lesions* were outlined by Dr. Thomas A. Johnson of Philadelphia.

The *Diagnosis and Early Treatment of Poliomyelitis* were discussed by Dr. W. A. Daniel, Jr., of Montgomery.

Dr. Alfred Habeeb, Fairfield, read a paper on *The Handling of Operating Room Emergencies Under Anesthesia*.

The *Jerome Cochran Lecture* was delivered by Dr. Emil Novak of Baltimore. His subject was *The Relation of Hormones to Female Genital Tumors*.

President Weldon awarded certificates of distinction to the following physicians of Alabama who have been practicing their profession for fifty years:

THE FIFTY YEAR CLUB

CLASS OF 1951

Blue, John H.
Boyd, Lynn M.
Bryan, James L.
Coleman, Henry N.
Comer, Robert T.
Darby, Henry A.
Dixon, Duncan P.
Gramling, James W.
Grayson, Ambrose T.
Huey, Thomas F., Sr.
Jackson, Leonidas F.
Jones, Giles W.
Killgore, James J.

Martin, Robert A.
Maxwell, Walter J.
McLain, Andrew D.
Miller, Samuel T.
Moore, Lawrence H.
Parker, Lorenzo D.
Partlow, William D.
Robinson, Henry W.
Roe, Lee Wright
Sankey, Howard J.
Savage, Henry J.
Scott, Edgar M., Sr.
Wood, Frank R.

Miscellaneous Business

The Secretary of the Association announced vacancies as follows in the College of Counsellors:

Vacancies that will present in the College of Counsellors at this meeting of the Association are as follows and for the reasons set forth:

1st Congressional District—1. The second term of seven years of W. A. Stallworth has expired.

2nd Congressional District—3. The first terms of seven years of John L. Branch and E. F. Leatherwood have expired. L. V. Stabler's second term of seven years has expired.

3rd Congressional District—1. J. S. Tillman is deceased.

4th Congressional District—1. C. W. C. Moore's second term of seven years has expired.

5th Congressional District—2. The first terms of seven years of R. A. Foshee and A. C. Gipson have expired.

6th Congressional District—2. C. T. Acker's second term of seven years has expired. W. C. Golden's first term of seven years has expired.

7th Congressional District—3. E. T. Brown's second term of seven years has expired. R. B. Dodson's first term of seven years has expired. M. S. White is considered as having resigned.

8th Congressional District—2. The second terms of seven years of J. O. Belue and Carl A. Grote have expired.

9th Congressional District—2. The first terms of seven years of H. W. Allgood and Dan C. Donald have expired.

Afternoon Session, Friday, April 20

2:00 P. M.

Dr. James G. Donald read a paper entitled *Surgery in the Treatment of Hypertension*.

Dr. George Crile, Jr., Cleveland, Ohio, discussed *The Present Status of the Treatment of Diseases of the Thyroid Gland*.

Diagnosis of Diseases of the Colon was dealt with by Dr. Robert C. Pendergrass of Americus, Georgia.

Surgery in the Treatment of Pulmonary

Tuberculosis was the subject of the paper given by Dr. Jesse P. Chapman, Jr., Selma.

Dr. E. Dice Lineberry, Birmingham, read a paper on Acute Myocardial Infarction—Diagnosis and Treatment.

Dr. J. A. Meadows, Jr., Birmingham, gave The Roentgen Aspects of Gallbladder Pathology.

Social Events

The Mobile County Medical Society entertained at a reception and dance at The Admiral Semmes Hotel from 9:00 to 12:00 midnight.

(To be concluded in the June Journal)

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

THE TYPHOID CARRIER

If you have read the book *Plague On Us*, you probably will recall the case of the Methodist ladies of Hanford, California. The author, Geddes Smith, describes it in considerable detail. It is an incident with considerable meaning for anybody interested in health.

Those California Methodist ladies had a good idea. Like most church people, they were finding a great deal more calls for help to those in need than they could answer. For, also like most church people, they were strictly limited in the money they could spend, as their hearts and sympathies were much bigger than their pocketbooks. So they were quick to see the money-raising potentialities of serving meals to visitors at a fair soon to be held in that community. There would be a large crowd, all as hungry as people usually become after watching exhibits and tramping from one display hall or side-show attraction to another. The church basement was pretty well filled with good substantial chairs. There were plenty of tables to be had, some belonging to the church, others that could be borrowed from people of the neighborhood. And everybody knows that country people, or small-town people, delight in cooking for affairs of this kind and even furnishing the food themselves. So the plan took on rapidly. The tables were all set up, and there was a good business in half-dollar meals on the day of the fair.

The dinner was a financial success, and, for a while, everybody concerned was happy

about the whole thing. But a few days later the picture began showing an unpleasant side. One of the ladies who had attended the dinner and helped wash dishes became sick. The next day four others were sick. In less than a week the community was in the midst of an epidemic. As Mr. Smith described the situation, "the town was full of sick people; the little hospital was crowded; the doctors were fagged out."

The cases differed from each other. But all of them looked suspiciously like typhoid fever. In time it became evident that they all were cases of this disease.

The doctors and others were puzzled. Hanford had been free from typhoid for a long time. And for good reason. For its water came from deep wells and therefore was most unlikely to pick up any typhoid germs, or any other kind, for that matter. And, small as it was, it provided modern sewage service for most of its population. So that possible cause could be eliminated. But there was the solemn, unchallengeable fact: An alarming number of people had suddenly and most unexpectedly developed typhoid. In all, the victims stood at 93. Every one had either eaten a meal at the church or taken food from there to eat at home. The youngest victim was 18 months old. The oldest had passed his 65th birthday.

Health officials and doctors got busy trying to trace down the particular food that had brought so much sickness. A careful study was made of every possibility. By a process of elimination, one possible source after another was checked and discarded. At last attention was centered upon one of the fine ladies of the neighborhood. Could she have been the innocent cause of all that

trouble? She could, and was. Here is what Mr. Smith has to say about that:

"... only one (of the possible sources of that outbreak) told a story which seemed to contain a helpful clue.

"This was Mrs. Pingree, a widow who had formerly supported herself and her family by taking in boarders. Seven or eight years before the church supper, two of these boarders had developed typhoid fever within a week of each other, and the doctor could never quite explain how they got it. Some years after that two more cases developed among Mrs. Pingree's boarders, and these, too, were hard to account for. The investigators found two of these old cases living in Hanford, and both insisted that they had eaten regularly at Mrs. Pingree's table several weeks before they fell ill. Here was a story of familiar pattern: a disjointed series of occasional cases among the associates of a person involved in the handling of food. Mrs. Pingree, so far as she knew, had never had typhoid fever, though she remembered that her daughter had suffered from it thirty-five years before. But when the reports came back from the laboratory the case broke: she was a carrier, and the only one among the seven suspects."

Unfortunately, there are a considerable number of Mrs. Pingrees known by other names, here and there throughout the United States. There are many others in other parts of the world. For the problem of the typhoid fever carrier is still very much with us. As more and more headway is made in preventing cases from developing from other sources, the carrier becomes an even more important factor in the over-all typhoid picture.

There are two types of typhoid carriers. One is dangerous from this point of view for only a short time. The other is a hazard to others for years, perhaps the rest of his or her life. The temporary carrier is a recently recovered typhoid patient. His period of infectiousness usually lasts just a few weeks.

Permanent typhoid carriers are estimated at from two to four per cent of all those who have the disease. Some of them have had it in such a mild form that they do not know they have done so. Indeed, some people who have been found to be carriers do not remember having had typhoid at all. Our

friend Mrs. Pingree was like that, you will recall.

Fortunately, that term *permanent*, when used with regard to typhoid carriers, does not mean exactly what it says. It is possible to turn permanent carriers into non-carriers in a fairly large percentage of cases. This is done by a relatively harmless operation. It consists of the removal of the gallbladder. About three operations of this kind out of four are successful. Whether a particular one is, or is not, depends upon the part or parts of the body where these typhoid bacilli gather. In about 75 per cent of the cases, they remain in the gallbladder. Those are the ones of course which are made non-carriers by removal of the gallbladder. In the other 25 per cent of the permanent carriers, those germs, or bacilli, appear in other parts of the body. They may be in the kidneys. They may tend to concentrate in the bile ducts. Or they may gather somewhere else.

Unfortunately, the already mentioned gallbladder operation is the only procedure by which a carrier can be turned into a non-carrier. As in the case of many other forms of illness, it was hoped that the so-called "miracle drugs" would perform some of their miracles with typhoid carriers. Particular hope was aroused by the successful introduction of chloromycetin. But those hopes were dashed against the hard wall of experience. This product has been most helpful in treating typhoid cases, just as penicillin has been in the treatment of, say, syphilis. But it has had no appreciable effect upon carriers. So, for the present at least, surgical removal of the gallbladder is the only means of making them safe.

Unfortunately, that procedure is not available to everyone. For this is a major operation, although not a particularly serious one under most circumstances. The same considerations enter into the equation here as in other major operations. It may be advised against for any one of a number of reasons. The carrier, for example, may be too old. He or she may be in such generally poor health (without any connection with the carrier status) that there is not the physical stamina necessary to withstand this sort of strain. The carrier may be suffering from an acute disease that would make it highly advisable at least to postpone any

major surgery. Certain chronic illnesses, such as heart disease, might make this or any other form of major surgery too risky. So every proposed operation of this kind has to be weighed on its individual merits. And of course the person to do the weighing is the doctor.

Typhoid carriers are not evenly distributed among our people. Four-fifths are estimated to be adult women. The explanation for part of this seems to be that the diseases affecting the biliary tract are especially prevalent among women. The greater tendency for older people, women especially, to be carriers also has a logical explanation: Since, once a carrier, always a carrier (unless corrective measures are undertaken), it stands to reason that an older person would have a much greater chance than a younger one to have acquired this unfortunate physical characteristic.

The increased likelihood that adult women will become typhoid carriers is most unfortunate. For probably no other group of the population is anything like as dangerous as potential spreaders of typhoid fever as they. Adult women numerically dominate the teaching profession. Adult women constitute practically all of our nursemaids. And adult women figure prominently in most of the other vocations and professions that bring one group into close physical association with others, and, in other ways, make it extraordinarily easy for their germs to get into other people's bodies.

Another unfortunate thing about the typhoid carrier is that she or—less likely—he does not look like a carrier. There is nothing about her physical appearance to make people careful when around her. For the carrier, even one with a dangerous epidemic figuratively in the touch of her hand, looks just about like everybody else. Unlike the person who may give you tuberculosis, she has no cough. She does not look emaciated. She moves with all the vigor and energy of a sailor on shore leave. If you have only her appearance to go by, you would invite her to eat at your table. You would employ her to cook and serve your food and look after your children as readily as anybody you know.

Efforts to protect the public against the typhoid carrier run right into one of the fundamental rights granted by the U. S.

Constitution. In one of the dictator countries, such a person can be required to submit to the already mentioned gallbladder operation. But not here. If a carrier wishes to stand upon her constitutional rights, nothing can be done by force to move her.

However, there are other ways of coping with her and the problem she creates. One is to make it worth her while, in a financial way, to submit to the operation. New York for example, used to have, and presumably still has, a standing offer of \$250 for those willing to exchange their gallbladders for cash.

Another way is less conciliatory and much less to the carrier's advantage. She can be severely restricted in her choice of jobs. She can be prevented by law from engaging in any kind of occupation that might endanger others. Thus automatically she would not be able to cook in a hotel, restaurant or cafeteria. She could not teach school. Every home would be firmly closed to her as an applicant for a nursemaid's job or as a governess. No doctor would give her employment as an office nurse. There would be no chance for her to get work as a private duty nurse or nurse in a hospital. In short she would find it all but impossible to earn a livelihood. In the end, she probably would change her mind and submit to that operation, which, as already pointed out, is not a dangerous one. And people can get along very nicely without their gallbladders.

In many places, known carriers are required to register with the public health authorities and remain under varying degrees of supervision. Efforts are made to see that they use special care in the disposal of excreta. Cleanliness, with special emphasis upon frequent washing of the hands, is drilled into their consciousness. In some places they are expected to send only sterilized wearing apparel to commercial laundries.

It is impossible to know exactly how great the danger from typhoid carriers really is in Alabama. For, here and in most other places, there are no exact figures on the number of them in existence. However, there is no occasion for undue fear. At the same time, this danger is real. It should be guarded against constantly.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

MALARIA IN ALABAMA

The incidence of malaria in Alabama has declined rapidly in recent years. Other sections of the country have had a similar experience with this disease. The Laboratories of the Health Department examined 6,973 blood films for malaria during 1950 and failed to find a single one positive. However, physicians of the State reported 87 cases of malaria during the year. Of the 6,973 blood films examined by the Health Department Laboratories in 1950, 3,034 were from eight counties of the Tennessee River basin, where a high incidence of malaria was known to prevail a few years ago. Increasing evidence indicates that endemic malaria is approaching the vanishing point in some areas of Alabama. This condition also exists in other sections of the country.

The National Malaria Society Committee met in Washington, D. C., October 5, 1950. Criteria to determine when malaria ceases to be an endemic disease were adopted at that time by the Committee. A summary of deliberations of the Committee are reproduced below. Physicians of the State are urged to cooperate with the Committee by forwarding blood smears on suspected cases of malaria to the Health Department Laboratories for confirmation. Positive slides will be forwarded to the National Depository for Malaria Slides.

As endemic malaria approaches the vanishing point within any large area, the localization of residual cases becomes of paramount importance. The most objective means of establishing cases of malaria is to produce acceptable evidence of parasitemia. To identify primary indigenous cases—the basis to endemicity—adequate epidemiologic data must be available.

CRITERION OF CESSATION OF MALARIA ENDEMICITY

Malaria may be assumed to be no longer endemic in any given area when no primary indigenous case has occurred there for three years, if reporting and case finding are actively promoted and adequate investigations are carried out. (Minimum reporting data should include the name and address of the patient and of the diagnosing physician.)

Definitions

1. Primary indigenous malaria shall consist of the first parasite positive evidence of infection, resulting from natural (mosquito) transmission within the given area.

2. Adequate investigation is defined as the epidemiologic investigation and appraisal by qualified personnel of each reported case. This involves verifying the diagnosis and determining if possible where and when the transmission occurred.

This opinion is rendered with the full knowledge that relapses of malaria may occur after periods of latency exceeding three years, but it is believed that these instances will be so infrequent as to be inconsequential.

RECOMMENDATIONS

1. That all slides considered to be positive be submitted to a national depository for review.

2. That the Public Health Service (Communicable Disease Center) be designated as the national depository.

3. That consultants, including non-governmental authorities, be appointed to review all controversial slides.

4. That non-governmental consultants will periodically examine and review the epidemiologic appraisals.

5. That inasmuch as determining the cessation of malaria transmission is dependent upon adequate epidemiologic intelligence, it is essential that every effort should be made to stimulate morbidity reporting, parasitologic confirmation, and case appraisal.

SPECIMENS EXAMINED

January 1951

Examinations for diphtheria bacilli and Vincent's	330
Agglutination tests (typhoid, Brill's and undulant fever)	998
Typhoid cultures (blood, feces and urine)	416
Examinations for malaria	181
Examinations for intestinal parasites	3,938
Serologic tests for syphilis (blood and spinal fluid)	28,240
Darkfield examinations	7
Examinations for gonococci	1,919
Examinations for tubercle bacilli	3,756
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	91
Water examinations	1,379
Milk and dairy products examinations	4,267
Miscellaneous	1,109

Total 46,632

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1951

	Jan.	Feb.	E. E.* Feb.
Typhoid and paratyphoid	4	1	3
Undulant fever	3	5	2
Meningitis	13	20	13
Scarlet fever	57	43	71
Whooping cough	132	94	77
Diphtheria	29	26	32
Tetanus	2	2	2
Tuberculosis	218	342	189
Tularemia	0	2	2
Amebic dysentery	2	2	2
Malaria	1	0	49
Influenza	771	4395	1463
Smallpox	0	0	1
Measles	49	116	346
Poliomyelitis	9	7	3
Encephalitis	1	2	0
Chickenpox	267	510	186
Typhus	4	3	20
Mumps	101	288	191
Cancer	326	316	227
Pellagra	1	0	2
Pneumonia	195	352	494
Syphilis	195	219	1092
Chancroid	6	5	13
Gonorrhea	189	226	483
Rabies—Human cases	0	0	0
Positive animal heads	28	19	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

Chronic Disease—A program for the prevention or diminution of disability and the prevention or postponement of death from the chronic diseases is based upon early diagnosis and adequate treatment. In some of the chronic diseases the validity of this approach is substantiated by clinical and statistical evidence. In others, the evidence has not been marshalled as yet, but will be provided as a result of more experience with the "preventive" approach.

The early diagnosis of chronic illness would be furthered immeasurably by mass screening devices. A number of such devices exist. Thus, audiometry can be employed to detect hearing defects, tonometry to discover early glaucoma, and relatively simple devices can be employed to test for visual acuity. Height, weight and temperature, as well as pulse and blood pressure can be measured. Urine and, if need be, blood can be analysed for the detection of nephritis and diabetes. The anemias and other blood dyscrasias can be determined by the study of the blood. The photoroentgen can reveal disease in the lungs and heart. These procedures do not require the presence of medical personnel but can be administered by adequately trained technicians. The employment of a combination of these devices for mass screening is being used in a number of localities. These so-called multiphasic or multiple screening centers refer the individuals whose screening results in abnormal findings to their own physicians or to diagnostic clinics for a definitive diagnostic work-up.

The relative merits and practicability of this type of periodic screening as compared with the more complete periodic examination which includes a history and physical examination by the physician has still to be evaluated.—Cohart, *Connecticut M. J.*, April '51.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director
PROVISIONAL BIRTH AND DEATH STATISTICS FOR DECEMBER 1950, AND
COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During December 1950			December Rates* (Annual Basis)		
	Total	White	Colored	1950	1949	1948
Total live births	7070	**	**	27.2	27.9	28.8
Total stillbirths	215	**	**	29.5	23.0	32.4
Deaths, stillbirths excluded	2577	1444	1133	9.9	9.7	8.9
Infant deaths:						
under one year	284	128	156	40.2	38.5	37.9
under one month	172	87	85	24.3	25.6	27.0
Cause of Death						
Tuberculosis, 001-019	69	39	30	26.6	21.3	28.9
Syphilis, 020-029	16	3	13	6.2	7.8	6.2
Dysentery, 045-048	1		1	0.4	0.8	***
Diphtheria, 055					0.8	0.8
Whooping cough, 056	2	1	1	0.8	0.8	1.6
Meningococcal infections, 057	3	3		1.2		1.2
Poliomyelitis, 080, 081	2		2	0.8	0.8	0.4
Encephalitis, 082, 083	1	1		0.4		
Typhus fever, 100-108						1.2
Malaria, 110-117	1		1	0.4	0.8	
Malignant neoplasms, 140-200, 202, 203†	214	146	68	82.4	84.9	79.6
Diabetes mellitus, 260	28	16	12	10.8	12.8	17.6
Pellagra, 281	1	1		0.4		1.2
Vascular lesions of central nervous system, 330-334	320	185	135	123.1	115.9	93.7
Other diseases of nervous system, 300-318, 340-398	47	24	23	18.1	17.4	10.9
Rheumatic fever, 400- 402	7	4	3	2.7	2.3	0.4
Diseases of the heart 410-443	755	470	285	290.5	291.5	214.3
Diseases of the arteries, 450-456	31	22	9	11.9	13.2	7.8
Other diseases of the circulatory system, 444-447, 460-468	26	17	9	10.0	13.2	2.7
Influenza, 480-483	22	12	10	8.5	6.6	9.4
Pneumonia, 490-493	113	50	63	43.5	43.8	45.3
Bronchitis, 500-502	7	5	2	2.7	1.9	2.3
Appendicitis, 550-553	4	2	2	1.5	1.9	2.3
Intestinal obstruction and hernia, 560, 561, 570	14	8	6	5.4	8.1	3.9
Gastro-enteritis and colitis (under 2) 571.0, 764	10	4	6	3.8	4.3	4.7
Cirrhosis of liver, 581	9	6	3	3.5	3.9	4.7
Diseases of pregnancy and childbirth, 640-689	15	7	8	20.6	12.2	18.5
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	3	2	1	4.1	4.1	6.6
Congenital malforma- tions, 750-759	32	22	10	4.5	3.2	4.1
Accidental deaths, total, 800-962	218	133	85	83.5	70.5	61.3
Motor vehicle acci- dents, 810-835, 960	93	70	23	36.2	30.6	23.8
All other defined causes	461	223	238	177.8	165.5	203.8
Ill-defined and un- known causes, 780, 793, 795	148	40	108	57.0	62.4	63.6

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the December report of the years specified.

**Not available or not comparable.

***Included in "All other defined causes."

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

AMERICAN MEDICAL ASSOCIATION NEWS

FROZEN, CONCENTRATED ORANGE JUICE AS NUTRITIOUS AS FRESH FRUIT

Approximately 98 per cent of the vitamin C in fresh oranges can be retained in the frozen, concentrated juice if proper methods are used, a report to the Council on Foods and Nutrition of the American Medical Association revealed.

The report, published in the May 5 Journal of the American Medical Association, said "the frozen concentrated product can be as valuable from a nutritive content as is fresh orange juice."

It was pointed out that fresh oranges of good quality picked at the proper time were essential to insure a high vitamin C content in the concentrated product. The report said:

"For example, studies indicate that the vitamin C content of fresh oranges may show considerable variation. This is due in part to seasonal influences. In general, fruit picked in midseason tends to be higher in vitamin C content than does that picked early or late in the season. Other factors, including variety of fruit, degree of ripeness and condition of the soil, also significantly affect the vitamin C content of the fresh fruit."

"The danger of vitamin C loss," the report continued, "is most likely to occur as a result of improper handling or storage in the home. For example, if after reconstituting the juice is allowed to stand in open containers at room temperature, appreciable losses will occur. However, if the reconstituted juice is placed in the refrigerator at 40 degrees F., vitamin C losses will be negligible. Ideally, the juice should be consumed as soon as possible after reconstituting to obtain maximum vitamin C value."

In the same issue, a Journal editorial said in part:

"When frozen foods are selected, prepared and stored (whether at home or commercially) according to the best of currently available scientific knowledge, they can compare favorably in nutrient content and flavor with the fresh product.

"Much of the loss of the water-soluble vitamins and other water-soluble constituents of vegetables preserved by freezing, canning or dehydration occurs as the result of the preliminary blanching or precooking to which they are subjected . . . Blanching in water frequently reduces the ascorbic acid content of vegetables as much as 16 per cent. Such losses tend to be minimized when the blanching time is shortened by the use of boiling water and the same water is used repeatedly . . .

"Another important factor in the preservation of vitamins and flavor is the rate of freezing . . . Observers have found that eight to 12 hours may be used for freezing without significant impairment. This means the products frozen in home freezing cabinets can be as nutritious as those obtained by quick freezing. The freezing time should not be increased beyond 12 hours, however, because of deteriorative changes that may occur if the temperature is not dropped rapidly enough throughout the entire package . . .

"Storage at 0 degrees F. seems quite satisfactory, at least when the storage period is a year or less. Losses (in nutrient value) become much greater if the temperature is allowed to rise to 10 F. or is allowed to fluctuate between 0 and 20 F. At these temperatures peas lose 50 per cent of their original ascorbic acid in one year and show color deterioration."

CURE HEART CONDITION BY REMOVING MEMBRANE

A serious heart condition, caused by tuberculosis inflammation of the membrane which surrounds the heart, is being cured by two San Francisco doctors through surgical removal of the diseased membrane.

Pericardiectomy—as the removal of this membrane is called—was performed on four patients suffering from tuberculous pericarditis. The doctors report three of the patients are cured and the fourth shows progressive improvement.

A recent issue of the Journal of the American Medical Association carries this report by Drs. Emile Holman and Forrest Willett of the Stanford University School of Medicine and the San Francisco Veterans Administration Hospital.

The mortality rate from tuberculous pericarditis has been high, the doctors said. Tuberculosis germs attacking the membrane around the heart cause it to become thickened and inflamed, putting pressure on the heart. Patients become increasingly disabled by cardiac compression. In the past, patients have been treated by prolonged bed rest.

ACTH HELPS SEVERELY BURNED CHILDREN

Further evidence that ACTH is a valuable aid in the treatment of severely burned persons was reported today by four Minneapolis doctors in the May 5 Journal of the American Medical Association.

Drs. Forrest H. Adams, Eldon Berglund, Samuel G. Balkin and Tague Chisholm, who administered the drug to three severely burned children, reported that there was a decrease in the fever, an increase in appetite and an improvement in the emotional status of the children. They received the hormone for five, 30 and 100 days respectively.

The doctors are associated with the University of Minnesota Medical School and the Minnesota General Hospital.

The doctors explained that fever, lack of appetite, irritability and emotional instability, so often present in severely burned persons, pose many problems to the attending physician. For example, loss of appetite—probably related to the fever—and the loss of body fluids and proteins from the burned area might produce a state of malnutrition, making skin graft difficult.

The use of ACTH in severely burned patients is, they said, "a rational form of treatment justifying further investigation."

HEALTH INFORMATION FOUNDATION SCHEDULES FIVE HEALTH BROADCASTS

The American Medical Association has announced that the Health Information Foundation of (420 Lexington Avenue) New York (17) has scheduled a series of five

weekly documentary broadcasts focused on community health work.

The series—entitled "All Their Powers" and made in cooperation with the National Broadcasting Company—will be released at 5:30 p. m., EST, beginning May 12. The programs will be carried by many local stations under sponsorship of state and county medical societies.

The title comes from a declaration by the statesman Disraeli that "The health of the people is really the foundation upon which all their happiness and all their powers . . . depend." By means of tape recordings the voices of the actual persons who did work in their communities will be heard.

The first program will tell how the citizens of rural Alexander County, N. C., lacking hospital facilities, were able to raise funds to build a model combination hospital and health center.

The second broadcast, scheduled for May 19, demonstrates how members of the Negro community in Atlanta, Ga., staged a "Jamboree" to attract 15,000 persons to a multi-test screening clinic. The May 26 program will show how 400 residents of Clinton County, O., rang every doorbell in the county to make a health survey, uncovering facts which are now leading to improved health and hygiene in Clinton's rural and urban areas.

The two concluding programs, scheduled for June 2 and June 9, tell how the citizen boards managing voluntary hospitals of Minneapolis are combining various activities for increased efficiency, and how the physicians of Oakland, Calif., instituted a program assuring all residents prompt 24-hour-a-day medical service and an opportunity to talk over with a doctors' committee any criticism they may have of the care received.

The American Trudeau Society, medical section of the National Tuberculosis Association, has approved the administration of BCG vaccine to nurses, physicians and hospital attendants, who have negative tuberculin tests, because these individuals are almost constantly exposed to tuberculous infection from known and unknown tuberculous patients. It also approves BCG for (1) the Indians, (2) inmates and attendants in institutions for mental patients, and (3) in slum areas in certain large cities where proper housing and living conditions have not as yet been achieved.—*Smith, Nat. Tuberc. A. Bull., May '51.*

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THE MALE FROG PREGNANCY TEST

A VALUABLE OFFICE PROCEDURE

JUDSON D. DOWLING, JR., M. D.

Tuscaloosa, Alabama

The question of whether or not pregnancy exists in a given case is usually not an urgent problem, and, though possibly of considerable moment to the patient, does not often justify an expensive, time-consuming laboratory procedure such as the Friedman rabbit test. However, the physician, perforce occasionally in doubt about the diagnosis of early pregnancy, would make use of a simple, reliable, inexpensive, quick pregnancy test were one readily available for office use. In our experience, the use of the male native frog, *Rana pipiens*, in a biologic pregnancy test as first devised by Galli-Mainini in March 1947, fulfills all these criteria very satisfactorily.

The basis of the test is a phenomenon which occurs in the frog testis when stimulated by gonadotropic hormone present in pregnancy urine. This specific testicular response is attended by the appearance of spermatozoa in the urine of these frogs. Spermaturation may also be made to appear in these test animals by the injection of chorionic gonadotropin, pituitary gonadotropin, or crude pituitary extracts. However, estrogens, thyroid, Pitressin, adrenal-in, progesterone, and testosterone have been shown not to influence the test. Spermatozoa do not appear at any other time in the native *Rana pipiens* and several other varieties of frogs investigated by various authors. McCallum¹ has even reported similar qualities in the native common toad. Galli-Mainini²

reported the results of 2661 frog tests, in which there were 1166 positives with an accuracy of 100 per cent for the latter. For the 1495 negatives there was an accuracy of 98 per cent. He did not use a method for concentrating the patient's urine sample nor have the several other investigators reporting their experiences with this test. In all these reports, about 10 cc. of unaltered urine were usually injected subcutaneously into the frogs.

In our office practice we have utilized an old but simple method for concentrating the patient's urine which we find entirely satisfactory and which we believe decreases the incidence of false negatives and, at the same time, is less damaging to the frogs. Many frogs do not tolerate the injection of unchanged urine.

We began using the frog test modified by the concentration of the urine sample in our office November 1949, and since that time have performed approximately 100 tests, usually in patients in which there was some question of early pregnancy. In this series there have been three tests falsely negative, but in no instance has there been a falsely positive test as determined by the subsequent histories of these patients. We have had a positive test as early as five days after a missed period. This early positivity has been reported by several investigators. The test is most reliable in the first trimester of pregnancy when gonadotropin urine titers are normally at their highest level. The literature indicates that the test is of distinct value in suspected ectopic pregnancy and in

1. McCallum et al.: Am. J. Obst. & Gynec. 59: 345, 1950.

2. Galli-Mainini: J. A. M. A. 138: 121, 1948.

new growths of chorionic tissue such as hydatidiform mole. Women past the menopause, males, children, as well as non-pregnant females, give consistently negative results.

Select male frogs may be obtained from any of several commercial dealers. After trying a number of methods we have found that the frogs are best stored in the refrigerator in covered plastic dishes in about one inch of water. When refrigerated, feeding has not been necessary because the frogs remain in hibernation. The water is changed at frequent intervals. In this way our frogs have remained healthy and clean for long periods. The entire stock is replaced at 12-week intervals.

Fresh, early morning urine is preferred, although little loss of gonadotropic hormone occurs if the sample is allowed to stand at room temperature for several days. We prepare the patient's specimen by adding 90 cc. of urine to 180 cc. of U. S. P. acetone. This mixture is allowed to stand 30 minutes. More or less precipitate occurs in this time. The supernatant fluid is discarded and the remaining precipitate further concentrated by centrifuging, usually in two test tubes. The supernatant fluid is again discarded, leaving a few cubic centimeters of precipitate. To this, 2 cubic centimeters of water are added and thoroughly mixed with an applicator stick. This mixture is again centrifuged and 1 cc. of the supernatant fluid is used for injection into the frog. The injection is made with a small needle under the skin on the back, being careful not to enter a major body cavity. As a routine precaution, a urine specimen should be obtained from the frog before starting the test to be sure that spermatozoa are not present. The urine specimen is easily obtained by holding the frog over a glass slide with his back legs held up along his body in a "frank breech" position. Urination usually occurs when this is done, although occasionally several efforts must be made after brief rest periods. After the injection is made, the frog's urine is observed microscopically for the presence of spermatozoa at the end of 30 minutes, one hour, two hours and 24 hours. In most instances, if the test is to be positive, the report is available within one hour. The frog spermatozoa have a very characteristic appearance with peculiar fusi-

form heads and long, barely visible tails. In a positive test they are usually present in great numbers, although the presence of very few is equally significant. These spermatozoa are very active, although they make but little actual progression on the slide. Rarely, other motile organisms appear in the frog's urine, but with a little experience these offer no confusion. The frog remains out of the refrigerator during the performance of the test.

If the test is negative, the frog can be used for another patient's test in two or three days. If positive, he should not be used again before two weeks have elapsed and the urine is again free of spermatozoa. Actually, in our experience, the spermatozoa of a "positive" frog will usually disappear within one week, although rarely nearly two weeks may be required for this clearing.

To indicate further the value of this test, a few cases from our private practice may be cited.

Case No. 1: E. H., 20-year old college student, married one month, presented herself with a history of having missed 5 days. Her periods were fairly normal but often delayed for as much as 5 days. Pelvic examination revealed no evidence of pregnancy. She stated that there had been no lapse in contraceptive technique. She expected to register for another school semester within two days, and strongly objected to starting school if pregnant. She was very anxious to have an immediate and reliable determination made. The frog test was positive two hours after her initial office appearance. Subsequent history and physical examination indicate that pregnancy does exist.

Comment: There are many patients for whom an early, accurate awareness of pregnancy is advantageous, even though not crucial, and in whom a decision may be difficult because of menstrual irregularity and meager physical findings. The frog test for this group is merely a nicety of practice that, if used in its proper perspective, can hardly do harm.

Case No. 2: F. H., age 19, without previous pregnancies, was first seen on December 28, 1949 with a history of amenorrhea for two months. She had just begun to have uterine cramps and vaginal bleeding with the pas-

sage of several large blood clots. She was treated symptomatically and with large doses of stilbestrol. Vaginal examination was not done at this time. Cramping and bleeding stopped promptly after a few hours. On January 5, a frog test was positive. On January 20, she had a massive uterine hemorrhage treated as an emergency by curettement. The curettings were reported by the pathologist as being hydatidiform mole.

Comment: Whereas the frog test did not influence the treatment of this patient, we did know that some complication of pregnancy existed. This case is an example of the positivity of the test in abnormal growths of chorionic tissue. In this patient, follow-up frog tests might be made to determine whether complete removal of the mole has been effected.

Case No. 3: R. C., age 34, para 1, was first seen January 5 at the office with a history and physical examination indicating a normal pregnancy of two months' duration. The frog test at that time was positive. Ten days later, on January 15, she developed abnormal cramping and profuse vaginal bleeding lasting for 3 days. During these 3 days, large doses of stilbestrol and other measures were instituted in an effort to prevent abortion. She improved, but continued to have vaginal spotting and remained on stilbestrol until March 3. Examination at that time did not show an expected progressive increase in size of the uterus, and we were pessimistic about the welfare of her pregnancy. However, the frog test was still positive. She then stopped bleeding entirely. When last examined, on March 25, she seemed entirely well, the size of the uterus and fetal parts being normal. Fetal heart sounds could be detected distinctly.

Comment: Here again the positive frog test did not actually influence the patient's management but did support the opinion that the fetus was viable and that she did not have a missed abortion, despite some evidence to the contrary at one period in her illness.

SUMMARY

The male frog pregnancy test is a simple, rapid test, comparing favorably in accuracy to more elaborate procedures, and can be

performed easily and inexpensively in any physician's office. A method is described for concentration of the patient's urine sample, which, though not new, adds to the value of the test.

Nasal Allergy—The diagnosis of nasal allergy can be made after a careful history, a thorough examination of the nose, a study of the nasal secretions, and skin tests. Of these, the history is the most important.

In my opinion, nasal obstruction is the most common complaint. It may be constant or intermittent and in many cases changes from side to side. Excessive nasal drainage is the second most common complaint. The discharge may be watery or thick and tenacious; it is clear most of the time but occasionally becomes yellow. Sneezing may or may not be present. An itching sensation in the posterior nasal passages may be noticed. Headache, fullness in the ears, irritation of the throat, and cough are often primary or complicating complaints.

In the history the physician should accurately determine if there is a seasonal incidence or a night and day variation in the symptoms. Home and occupational contacts with dust, chemicals, animals and smokes should be ascertained. Symptoms which are associated with the ingestion of certain foods should be inquired about. A review of dietary habits will reveal foods that are eaten in excess and those that produce minor gastrointestinal upsets. It is significant to note whether or not the symptoms remain constant upon a complete change of environment. A family history of any type of allergy is important. The patients should be questioned as to drugs being taken and known drug sensitivities. Nasal drops and sprays are so commonly used today that their type and frequency of application should be determined. The nose is an integral part of the body, not an isolated structure, and no history may be considered complete until a few questions are asked to evaluate the patient's general health. Such questions should determine the menstrual history, the presence or absence of excessive fatigue, excessive nervousness, constipation, major operations, major injuries, alcoholism, insomnia, and emotional status.

In the uncomplicated case the rhinoscopic examination usually reveals little pathologic change. At one time a pale, boggy mucous membrane was thought to be diagnostic of allergy and a hyperemic mucous membrane was thought to indicate infection. Improved methods of diagnosis have demonstrated that these assumptions are not necessarily correct. The allergic membrane may be pale and boggy, normal in appearance, or hyperemic. The nasal secretion may be scanty or abundant or thin or mucoid in consistency and may vary from clear to cloudy to yellow in color. The presence of polypoid tissue is an important diagnostic finding.—*Hall, Texas State J. Med., May '51.*

CARCINOMA OF THE CERVIX

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Carcinoma of the cervix is one of the most important neoplasms with which we have to deal, because of its frequency, and because of its grave prognosis. Carcinomas of the skin are more common but are not as dangerous to the lives of the patients in whom they arise. Approximately 17,000 women die each year in the United States with cervical cancer. It is estimated that approximately one per cent of all women between the ages of 35 and 75 have either incipient or active lesions of this nature.¹

Certain factors appear to influence the probability of a particular woman developing this carcinoma. It is less frequent in the Jewish race than in other races. It is an especially important tumor in the colored race, occurring about five times as often as carcinoma of the breast.² It occurs much more frequently in women who have borne children than in nulliparous women.

Women in the menopausal and immediately postmenopausal period are particularly affected. A typical study of age distribution made at the Ellis Fischel State Cancer Hospital, Columbia, Missouri, by Ackerman and del Regato³ showed that, of 431 cases, only 4 per cent occurred below the age of 30, and 7 per cent over the age of 69. Eighty per cent of the patients were between 35 and 69; and 53 per cent between 40 and 59. This is in contrast to carcinoma of the breast, the incidence of which steadily increases with age.

Histologically, carcinoma of the cervix is most often of the squamous cell type. Less frequently, adenocarcinoma is seen, probably originating higher in the cervical canal. A third type, adenocanthoma, is described, and is thought to arise in the upper portion of the endocervical canal in the region of

the junction of the cervix and corpus. This is statistically rare, and, for practical purposes, can be regarded as a variety of adenocarcinoma.

Grossly, the primary cervical lesion may be one of three types. It may be ulcerated, the ulcer being shallow or deep, depending on the duration and rapidity of growth. This ulcer may involve part of the cervical lip near the external os, the central portion of the cervix in all directions about the os, or the vaginal portion of the cervix may be completely destroyed by the ulcerative process, leaving an irregular cone-like crater with dirty, necrotic-appearing walls. The ulceration may lie completely within the cervical canal, so that the external portion of the cervix, early in the process, appears intact.

The second type of primary lesion is the so-called exophytic lesion, in which a fungating mass is seen, growing out from the cervix. Depending on the stage in which it is observed, this may arise from one portion of the cervix or may replace the entire cervix. It is usually nodular and highly vascular, with a relatively clean surface, although portions of the surface may show ulceration.

A third type is seen, in which the cervix is indurated and nodular, either with a smooth or a granular appearance. Red, granular-surfaced erosions may be seen extending over the lips of the cervix from the external os. This type of lesion often originates in the endocervical canal and spreads concentrically through the cervix rather than along the cervical canal.

Prognostic significance is often attached to the appearance of the primary lesion at the time of the first examination, the exophytic type "which grows toward you" being said to have a better prognosis. While there is probably considerable validity to this, it should be remembered that this is the type which will show the most dramatic immediate response to therapy, but, in the long run, may not do better than some of

1. California Cancer Commission Studies, California Medical Association, 1950, p. 113.

2. Ackerman, L. V., and del Regato, J. H.: *Cancer*. St. Louis, Mo.: C. V. Mosby Company, 1950, p. 852.

3. *Ibid.*

the other lesions. Many of the ulcerative lesions undoubtedly began as exophytic ones and outgrew their blood supplies. The nodular indurated types commonly progress to crater-like ulceration, sometimes while being treated.

Spread of the tumor beyond the cervix occurs by direct extension along the vaginal wall, and by direct lateral growth outward through the areolar tissue lying between the leaves of the broad ligament on each side of the cervix. When the patient is first seen, extension may be detectable on one side only, or on both sides. When far-advanced the tumor mass will reach and be fixed to the lateral wall of the pelvis.

Permeation of the lymphatic channels leads to more distant lymph node involvement. The preureteral lymphatics accompanying the uterine artery carry the tumor to the external iliac group of nodes along the pelvic wall. The postureteral lymphatics, which follow the uterine veins, lead to involvement of the deeper hypogastric nodes. Less commonly, the tumor extends along the lymphatics, following the uterosacral ligaments on each side of the rectum, resulting in deposits in the laterosacral nodes and the nodes at the sacral promontory. Extension to the lumbo-aortic nodes and cisterna chyli may lead to involvement of the thoracic duct, left supraclavicular nodes, lungs, liver, brain, and bones. These distant metastases are much less common, or at least less important clinically, in carcinoma of the cervix than in carcinomas originating in other organs. In 202 cases which had been treated, Henriksen reported that by the time of autopsy 50 per cent were found to have distant metastases, the liver involved in 16 per cent, bones in 15, lung in 14, large bowel in 7, and pleura in 5.

Unfortunately, a cervical carcinoma may be far advanced before symptoms are present which alarm the patient sufficiently to cause her to seek medical advice. A watery vaginal discharge may be the first sign of trouble. Later, this is likely to be yellowish as the tumor and surrounding tissues become infected. More commonly, the patient does not come to her physician until she has had bleeding, either spontaneous or after douche or intercourse. If the patient is in menopause, early bleeding in small amounts may be misinterpreted as meno-

pausal irregularity. It is not common, but does occur, that pain in the low back referred to the intrapelvic region, and sometimes radiating down the thigh, is the first symptom. This pain may be produced by the pressure of the parametrial mass or by involvement of presacral nerves. It may be explained away by the patient, or even by her physician, as neuritis, sciatica, or "lumbago." It sometimes happens that such pain is foremost in the mind of the patient, so that she forgets that other symptoms accompany or preceded it, and she may not inform the physician of these other symptoms voluntarily. Rarely, the patient may be seen by a physician first because of symptoms caused by a distant metastasis; for example, a pathologic fracture. Only the suspicion that the fracture is a pathologic one, and an adequate history, will prevent future embarrassment.

Physical examination, unless the lesion is very early, or is concealed in the endocervical canal, will reveal the changes in the cervix already described—ulceration, nodularity, induration, and the presence of a mass. Inspection of the vaginal wall may show extension of the mass downward from the cervix. Obliteration of the vaginal fornices should be noted when present. By bimanual palpation of the adnexal regions, a mass in the parametrium may be recognized and motility of the uterus determined. Bleeding of the cervix after manipulation and contact with the speculum should be watched for. A rectal examination should always be done. Involvement of the parametrium can be much better determined in this way than through the vaginal wall. Induration of the rectovaginal septum should be looked for as evidence of extension toward the rectum. During the bimanual examination of the vagina, or after it, the inguinal area should be palpated for enlarged glands, inguinal metastases being found occasionally.

The most crucial point in the management of a patient with cervical carcinoma has been passed when a suspicion of carcinoma is entertained. The sad truth is that the diagnosis is almost certain from the physical findings alone at the time the first pelvic examination is done. It is essential, however, that the diagnosis be confirmed, and equally necessary that the benign character of other lesions be established even though

the probability of their being carcinoma may appear small. The carcinoma we are most anxious to find is the one that presents itself so early that we cannot be sure from its gross appearance that it is carcinoma. An adequate biopsy will confirm the clinical diagnosis and can be obtained with very little difficulty from the cervix, there being little pain involved and no more preparation necessary than that needed for a pelvic examination, other than the possession of a biopsy forceps and a specimen tube with proper fixative. Bleeding is usually easily controlled with silver nitrate. If a pack is necessary, this can be readily managed in the office. An adequate fragment of tissue is essential, best obtained, in small lesions, in the region of the junction of normal and abnormal tissues. Several pieces are better than one. If the surface of the tumor has considerable infection, it may not be possible for the pathologist to establish the presence of carcinoma. A second, deeper biopsy may be necessary. If the lesion is early and confined to the endocervical canal, it may not be possible to make the diagnosis by a simple cervical biopsy, and curettement of the canal is necessary to establish the diagnosis.

Cytologic examination of fluid aspirated from the vagina and cervical canal has recently, in experienced hands, given good results in the recognition of cervical carcinoma.⁴ This is in no case preferable to biopsy of visible tumor. It is most likely to help in the patient in whom the lesion is so small or so concealed that an adequate biopsy is not possible. It may help in the future in the detection of unsuspected carcinoma. It must be remembered that the method yields a small number of falsely positive reports. The physician who has a positive cytologic report and no other evidence, including negative curettement, for believing that the patient has carcinoma has caught a Tartar. As with other technical procedures the accuracy of cytologic examination is determined to a considerable extent by the skill and experience of the individual doing the work. For this reason a general statement of the accuracy of the method at this time does not appear to be useful.

Before treatment of the patient is begun, the tumor should be classified with respect to extent, in accordance with one of the classifications commonly used. The League of Nations' classification is most widely used and will undoubtedly become universal. This classification is based entirely on clinical findings and does not take into account any information subsequently obtained by operation. It is essential, if results are to be evaluated properly, and various series compared in the search for improvement in treatment methods, that the classification originally made before treatment not be altered after response to treatment, or after the extent of lymph node involvement in seemingly early cases has been established at operation.

The League of Nations' classification, as modified in 1937, can be summarized as follows:

Stage I: The tumor is confined entirely to the cervix. Size of the tumor does not influence the staging, no matter how large it may be.

Stage II: The tumor involves the parametrium on one or both sides—but does not extend to the pelvic wall; the tumor invades the vaginal wall but does not extend down to the lower third of the vagina; or the tumor spreads to the body of the uterus.

Stage III: The tumor extends to the pelvic wall on one or both sides; involves the lower third of the vagina; or, there is an isolated metastasis against the pelvic wall.

Stage IV: The tumor invades the bladder wall, the rectovaginal septum or rectum, and extends above or below the limits of the true pelvis (vulva, nodules in the labia majora, abdominal or inguinal metastasis). Distant metastases are present, irrespective of the extent of the primary tumor—upper abdominal or supraclavicular nodes, liver, lung, brain.

For many years the treatment of carcinoma of the cervix has been almost entirely radiologic, and will unquestionably remain so for most patients unless some radically different method is developed. The radiologic methods include radium, external x-ray therapy, and intravaginal x-ray therapy. Radium is inserted into the uterine canal and placed against the cervix, using various types of uterine and vaginal applicators

4. Papanicolaou, G. N.: A General Survey of the Vaginal Smear and Its Use in Research and Diagnosis, *Am. J. Obst. & Gynec.* 51: 316, 1946.

The dosage used is usually stated to vary from 3,000 to 8,000 mg. hours, or its equivalent in radon is used. It must be pointed out that such a statement of dose conveys little information in itself, the true dose on the tumor for a given number of milligram hours being determined by the type of applicator and the arrangement of the radium sources within it. A more informative and significant statement can be made if the dose is calculated in terms of gamma roentgens at various distances from the applicator.

A dose of 7,000 to 15,000 gamma roentgens is considered to be effective in control of a tumor without excessive destruction of the tumor bed, and 4,000 to 7,000 may be effective.⁵ Less than 4,000 roentgens will be ineffective. The commonly used technique (7,000 to 8,000 mg. hours in uterine tandem and colpostat, or vaginal bomb; 7,000 mg. hours in the Ernest applicator) give an effective dose over a distance of 2.0 to 2.5 cm. on each side of the midline at the level of the internal os. The dose as far as 4 cm. to each side of the midline *may* be effective (4,000 to 7,000 r). The tumor in the parametrium farther lateral than this will certainly not be controlled by the radium alone. Long needles inserted into the broad ligaments have been used, notably by Corscaden,⁶ to increase the effectiveness of radium therapy to the parametria, but this method has not gained general acceptance as yet.

External x-ray therapy is generally used to augment the effect of the radium. Considerable variation exists in the dosage and technique of external radiation. In general, 4 to 6 ports are used over the lower abdomen and lumbar areas, either cross-firing the cervix or directed into the parametria. Treatment is administered to one or more fields daily, five or six days a week, over a period of 5 to 8 weeks, the period depending on the manner of administration and the total dose. The total dose given by therapists throughout the country varies from 1600 to as much as 3000 r, measured in air, to each of 4 ports; or 1200 to 1500 to each of

6 ports. The maximum dose is determined by the tolerance of normal structures; namely, the skin, small bowel, rectum and bladder. It may be administered in one series, retreatment ordinarily not being attempted except in cases of recurrence. Such a dose may give as much as 3,200 or 3,500 r at the level of the tumor. On the other hand, a smaller dose may be given, in the neighborhood of 2000 r at the level of the tumor, and this dose repeated after two or three months in the belief that the normal tissues near the tumor have a greater power than the tumor cells to recover from the irradiation during the interval, and that a greater irradiation effect can be obtained on the tumor with less damage to normal tissues in this manner. We have followed this policy, giving a total of 8,000 r (in air) in an eight-week period, distributed over six fields, waiting two months, and then giving a total of 6,000 r to the same fields in six weeks. The dosages cited above have been those generally employed with the 200 Kv therapy units in common use. Where 400 Kv or 1000 Kv units are used, somewhat different air dosages are administered but approximately the same dose at the tumor level results.

For a considerable period, x-ray has been administered through the vagina as an adjunct to external irradiation through the abdomen and back, in the place of, or in addition to, radium. There has been a recent increase in interest in this, largely because of the writings of del Regato.^{7, 8} It has the obvious advantage of permitting the x-ray to come directly down on the cervical tumor without passing through skin and bowel. The intravaginal cone limits the irradiation to a narrow beam, seldom greater than 5 cm. in diameter, and usually less than this. The irradiation effect is therefore limited to the cervix and may not cover all of a very large cervical tumor. Some therapists have employed a technique wherein the beam is directed to the various portions of the cervix and parametrium in succession. It does not appear to us to be possible to obtain a homogeneous dose throughout the area by this method and to avoid, with certainty,

5. Nolan, J. F.; Costolow, W. E., and De Sault, L.: Radium Treatment of Carcinoma of the Cervix Uteri, *Radiology* 54: 821, 1950.

6. Corscaden, J. A.; Gusberg, S. B., and Donlan, C. P.: Precision Dosage in Interstitial Irradiation of Cancer of the Cervix Uteri, *Am. J. Roentgenol.* 60: 522, 1948.

7. del Regato, J. M.: Role of Transvaginal Roentgenotherapy in Treatment of Carcinoma of the Cervix, *Surg., Gynec. & Obst.* 86: 480, 1948.

8. Caulks, R. M.: Review of 10 Years Experience with Transvaginal Roentgenotherapy, *Radiology* 52: 26, 1949.

overdosage in some areas. In general, 3000 to 4000 r are given in one to two weeks using either 200 Kv or 100 Kv with heavy filtration. The greatest usefulness of the method is in the management of those patients in whom, for mechanical reasons, adequate and accurate application of radium cannot be accomplished. In such patients the dose on the primary tumor can be brought up to the cancericidal level without the use of radium.

Certain general principles about irradiation therapy can be stated in spite of the wide variation described. In general, external x-ray therapy should precede the use of radium to decrease infection in the primary tumor and adjacent tissues and to reduce the tumor vascularity. The tumor is often shrunk sufficiently by this means so that the entire tumor comes within the distance from the applicator in which an adequate dose is delivered by the radium. Insertion of the radium applicator may be made feasible by this means in cases where it could not have been used initially. Adequate external therapy requires daily treatment over a long period, and may consist of two series of daily treatments, the radium being applied at the completion of the first series. The proper supportive care of the patient during this protracted treatment and between series is of extreme importance, although it is not usually discussed in the presentation of survival statistics. One should not treat a tumor and neglect the patient that is attached to the tumor.

After the development of the so-called deep x-ray therapy equipment (in the 180-200 Kv range) and adequate radium techniques, the surgical approach to carcinoma of the cervix was largely abandoned. In the past 10 or 15 years new interest has been displayed in the surgical management of certain types of cases in an attempt to improve the salvage rate beyond that obtained by irradiation. The radical hysterectomy of Wertheim has been used, and emphasis has been placed by Taussig and by Meigs on removal of regional and more distant lymph nodes which are often beyond the range of adequate dosage with x-ray and radium. It has not yet been determined whether these methods in general use will increase the number of cures or prolong the survival of the patient. If they do, no one will welcome the advance with more pleasure than the

radiologist who follows his patients and observes the recurrences and metastases he has been unable to prevent. It appears evident at the present time, however, that only about 10 per cent of the patients seen for the first time can be regarded as operable.⁹ It is also evident that the procedures advocated are formidable except in the hands of experienced surgeons and are not to be undertaken lightly. Meigs, in a discussion of the results of the surgical treatment of cancer of the cervix published in the May 1951 issue of the *American Journal of Roentgenology*, said: "It is obvious that since surgery has been suggested as a means of treatment the number of surgical disasters and surgical mistreatments have been out of all proportion to the value gained from the poorly considered surgical attack. For the time being and until a very large series has been reported at five years, we must all definitely advocate the use of radium and roentgen irradiation as the treatment of this disease."¹⁰

The complications of the tumor itself which must be considered in the management of the patient include anemia due to prolonged bleeding, hemorrhage, which is sometimes of an emergency nature, pelvic infection, general debility, ureteral obstruction by tumor encroachment with ensuing uremia, the development of rectal and vesical fistulae and, of course, distant metastases. Extension of the tumor within the pelvis to involve the presacral nerves is an important feature in the advanced case. Death is usually due to uremia, hemorrhage, or infection.

The acute complications of irradiation include general irradiation sickness, with nausea and vomiting, during the treatment, diarrhea and bladder symptoms, and the acute skin reaction. Depending on the plan of treatment followed, the skin may show erythema and dry desquamation, or there may be an exudative reaction with vesiculation. Considerable can be done to decrease the discomfort of the patient during the period when the reaction is at its height. These symptoms of the acute irradiation reaction are of a definite, short duration, so

9. Ackerman, L. V., and del Regato, J. H.: *Loc. cit.*, p. 882.

10. Meigs, J. V.: The Results of Surgical Treatment of Cancer of the Cervix Uteri, *Am. J. Roentgenol.* 65: 698, 1951.

that the patient can be given assurance that they will subside soon after treatment is completed. Management of the patient is best carried out by, or in consultation with, the radiologist, who has daily experience with these problems. This is particularly true of skin reactions which can be aggravated by over-enthusiastic misguided treatment.

There are certain persistent complications of radiation treatment which occur in a small proportion of cases, particularly in cases which have needed, because of recurrence or for other reasons, unusually vigorous treatment. Since tolerance to radiation varies in individuals, a few patients will have troublesome sequelae to ordinary doses. These must be accepted in the same way that the surgeon must accept a certain number of keloids or other surgical complications resulting from necessary surgical procedures. The primary consideration is the control of the tumor, and the control of the tumor requires adequate dosage even though permanent radiation changes result.

Ordinarily no serious skin changes result from treatment of carcinoma of the cervix. There may be pigmentation, moderate skin atrophy, and some telangiectasis, particularly after more than one series. More serious changes, even to the extent of radiation ulcer, may rarely occur if the reaction has been complicated by infection, the use of hot water bottles or heating pads, or the application of irritants. A persistent and troublesome proctitis may result from the combined effects of external x-ray therapy and radium. Stenosis of the bowel may occur, usually in the sigmoid. Bladder changes may occur. Rectovaginal and vesicovaginal fistulae are seen in 10 to 20 per cent of cases. It is difficult to know in such a case whether there was invasion of the bladder or rectovaginal septum before treatment, or whether the fistula is due to irradiation alone. Certain autopsy series have shown no significant difference in the incidence of fistulae in treated and untreated cases.¹¹ Aseptic necrosis of the femoral neck with pathologic fracture may occur rarely as a result of external x-ray. Vaginal stenosis and adhesions result commonly. In all cases

treated with adequate doses before menopause, sterilization and cessation of ovarian function will occur.

The most important factors in prognosis are the clinical stage of the disease when the patient is first seen and, of course, the adequacy of the treatment. The presence of infection makes for a poorer prognosis. Race and age, except for the general consequences of old age, are not significant. Histologic grade of the tumor has no useful prognostic value. There is an important individual difference in the response of tumors to irradiation which must be recognized. Two patients may be treated who have tumors which appear grossly and histologically to be identical, and one patient show remarkably good response, while in the other patient the tumor will fail to respond, or even progress during the treatment.

In spite of the rather considerable variation in methods of treatment, the survival rates throughout the world are similar. They can be summarized as follows:⁵

Stage I: $75 \pm 10\%$ survive 5 years or more.

Stage II: $50 \pm 10\%$ survive 5 years or more.

Stage III: $25 \pm 10\%$ survive 5 years or more.

Stage IV: $0 \pm 10\%$ survive 5 years or more.

SUMMARY

1. The pathologic and clinical characteristics of carcinoma of the cervix have been summarized briefly.
2. X-ray and radium therapy are the principal methods of treatment, and several techniques have been outlined.
3. Surgical treatment is still in the process of evaluation.
4. Irradiation reactions and irradiation sequelae, in a certain number of patients, must be accepted as the price of adequate irradiation if any significant number of patients are to be salvaged.
5. The prognosis of a patient with carcinoma of the cervix is determined chiefly by the clinical extent of the carcinoma before treatment is begun.

When the conviction that tuberculosis is an exquisite infectious disease has become firmly established among physicians, the question of an adequate campaign against tuberculosis will certainly come under discussion and it will develop by itself.—*The Aetiology of Tuberculosis*, Dr. Robert Koch, 1882. Translated by Berna Pinner and Max Pinner, published by NTA.

11. Henriksen, Emil.: The Dispersion of Cancer of the Cervix, *Radiology* 54: 812, 1950.

PREFRONTAL LOBOTOMY

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The last fifteen years have seen the anatomic and physiologic delineation of an intracranial procedure upon the anatomically intact brain for the relief of mental aberration.

In the beginning, there was little anatomic or physiologic basis for mutilating procedures that were performed in the hope of altering mental processes. It is well known that skulls have been found, dating back to prehistoric times, wherein a trephine opening, associated with a skull fracture, had been made.

In more recent times, during the Aztec civilization, many trephined skulls, demonstrating no fracture, have been found, which would indicate that the operations were directed toward the relief of mental symptoms themselves. It was felt that such trephination was for the purpose of letting out devils, but at least it must be assumed that the relationship between disorder of the brain and disorder of the mind, and recognized as being harbored within the skull, was commonly accepted.

The first intracranial operation done in modern times, as a deliberate attack upon the intact brain and with the purpose of helping mental disease, was performed about 1885 by Burekhardt in Switzerland. This procedure, which was so radical as to bring down vituperation and criticism upon its perpetrator, was based upon the previous work of Goltz, who found that when the frontal regions of a dog's brain had been removed there was a quieting effect upon the dog. Burekhardt also was familiar with the quieting effect of disease of the frontal lobe by such processes as frontal lobe atrophy and paresis. He therefore operated upon six patients altogether and felt that the patient was reduced from a disagreeable, violent, dangerous patient into a harmless working one.

Burekhardt did not live to see the later correlation with physiology and anatomy and, although he prophesied the eventual usefulness of the operation, his own work was done with so little understanding of emotional mechanisms and their localization

that his procedure must be considered little more than mutilation.

In 1935, Monez, after more critical and fundamental reviews of the functions of the frontal lobe by such men as Barre' and Vincent and Fulton, brought our fundamental knowledge of the functions of the frontal lobe to a more scientific level.

Monez felt that division of the frontal association pathways would be of benefit, in that such patients might be made more tractable and more easily handled; and possibly hoped for an ultimate actual cure in some cases. He felt, and it is so held today, that psychic disturbances do not affect intellectual function and that intellectual processes may run along without emotion if the connection between the frontal lobe and the thalamus is divided. He felt that the depressive symptoms, grandiose ideas, and anxiety delusions which dominate the mental activity of these mentally disordered patients might be changed by division of the association pathways conveying emotion from the frontal lobe to the dorsomedial nucleus of the thalamus. Monez had the feeling, and it has been borne out by further investigative work on the frontal lobes, that the association pathways probably transmit the conditioned reflexes necessary for the social adjustment of the patient. He felt that these pathways could be divided and thus do away with many of the delusional or morbid psychic conditioned reflexes.

Accordingly, Monez and Lima, by the use of a leukotome, wherein cores of cerebral tissue were cut out, did prefrontal lobotomies on numbers of deranged patients. As would be expected, he obtained his best results in agitated depression and his poorest results in chronic or deteriorated schizophrenia. It is interesting to note that Professor Monez was shot in 1939 by a delusional patient. I cannot find whether this patient had previously had a lobotomy.

Many men then added their contributions but probably the greatest impetus to progress was afforded by Freeman and Watts of this country, who began this procedure in 1936. Since then, almost all neurosurgeons

have added their bit and, although the operation was frowned upon in the beginning, it has gradually evolved into a useful procedure in the treatment of mental disease and has been so expanded that it is particularly useful in the treatment of intractable pain.

It is necessary to go into some of the simpler anatomy of the brain to delineate the significance of the frontal lobes. Frontal lobes are those parts of the brain lying anterior to the central fissure of Rolando. The first division is that of Area 4 and 4-S, constituting the motor area or the precentral gyrus. Anterior to that is the premotor area, Area 6, concerned with purposeful movement. Anterior to that is the prefrontal Area 8, concerned with movements of the head and eyes. Areas 9, 10, and 11 are concerned apparently with higher psychic functions. Lateral to this are areas 44 and 45, controlling articulate and written language, or the speech center. From these areas, i.e., 9, 10 and 11, the most important fasciculus is that of the anterior thalamic radiation which runs in the anterior limb of the internal capsule, on a horizontal section, and which ends in the dorsomedial nucleus of the thalamus. It is also known by the experimental studies of Earl Walker that the dorsomedial nucleus of the thalamus degenerates when the frontal pole is excised and that there is also definite degeneration of the anterior limb of the internal capsule. This proves that this radiation is a two-way connection between the frontal lobe and thalamus. It is felt that the thalamus is concerned not only with the reception of all sensory impulses but that it is the organ by which these sensations are endowed with emotional feeling. It is felt that the dorsomedial nucleus of the thalamus, by its connection with the frontal cortex, may well supply the affective tone or emotional response to a great number of intellectual experiences. It cannot be stated positively so far that this represents the sole means by which emotion and imagination are linked, yet this fasciculus is unquestionably of great significance, and its interruption is of major importance in the alteration of the personality seen after frontal lobotomy.

There is, of course, enormous literature upon the subject of mental phenomena associated with lesions of the frontal lobes. Most of these symptoms are due to depression of the affect or emotional response by

such things as atrophy, general paresis or frontal lobe tumors. The *witzelsucht* or pathologic cheerfulness and euphoria characteristic of frontal lobe disease is seen in such conditions as Pick's disease, Alzheimer's disease and frontal lobe tumors. Trauma to the frontal lobes has been followed carefully in many cases, particularly in war wounds where it was seen that bilateral loss of both frontal lobes, back to Area 6, resulted in a practical vegetative state, but lesser trauma to the prefrontal areas did not disturb intellectual capacity. The notorious Phinias Gage, whose skull is in the Harvard Museum, is a case in point wherein a crow-bar traversed the left frontal lobe, followed by mental aberration.

The *technique*, the *results*, the *complications*, the *morbidity* and *mortality*, and the various *mutations* of this operation which have been devised should now be considered.

The *indications* for prefrontal lobotomy in mental disease should be left to the psychiatrist. He will select those patients who are intractable to the usual psychiatric treatment, such as shock therapy, and who display the greatest amount of affect disorder. We can assume that those patients with obsessional mental disease and those with agitated depressions will derive the greatest benefit. The previous enthusiastic reports concerning the surgical treatment of schizophrenia have probably been overdone. However, in the early case, without too much deterioration, we could expect, according to reports by reliable men, fairly good results in the majority of such patients. The neurosurgeon should not feel qualified to select these patients with mental disease for the operation and, in every case, the psychiatrist should pass judgment and recommend, or not recommend, a lobotomy.

However, the surgeon may confidently select those patients wherein a lobotomy is done for the relief of intractable pain, due to malignant disease, in which the subjective worry and tension concerned with the reception of pain impulses is done away with.

The *technique* of prefrontal lobotomy is comparatively simple. The white matter of both frontal lobes is divided in a vertical plane at the level of the coronal suture on both sides, just anterior to the tip of the frontal horn of the lateral ventricle. This is done through two burr holes placed lateral-

ly at the coronal suture. From this point on there are many techniques, all of which have their advocates. The essential point of each technique is a complete division of all white fiber tracts with an attempt to avoid undue traumatization of the cerebral cortex. A surgically sound technique is that of dividing the white matter under direct vision, using a small metal suction tube and a lighted brain retractor. This allows one to occlude bleeding points as they are encountered and to insure an adequate division of the tracts. The alternative to this is the use of a straight leukotome or nasal septum elevator swung in an arc blindly. This, however, does not seem to be surgically sound since blood vessels may be torn in this process. The stopping of bleeding from a torn Anterior Cerebral Artery through a burr hole is practically impossible. The finger must be educated, if one is to use such a leukotome, so that arteries may be palpated. Dr. Freeman's device of an orbital approach from the base of the skull, blindly by means of an ice pick, dividing the frontal tracts, causes anyone with any surgical experience to suffer cold chills and to agree that every principle of surgery has thereby been violated.

The patients are operated upon under local anesthesia so that the result of the division of the tract may be interpreted as it is accomplished. These patients will many times tell the operator of the great relief of tension as certain fibers are divided. There is a great amount of technical folderol most of which is non-essential. The experienced neurosurgeon can perform a bilateral frontal lobotomy with a considerable amount of ease and with a minimum of postoperative complications.

Following the section of the last frontal lobe fiber tract, the patient becomes semicomatose and very confused. This confusion is considered to be a good omen in that the more marked and complete the confusion the better the prognosis as to mental relief that can be given. This, however, is debatable. The blood pressure, of course, varies; and immediately postoperatively there is a hypotension, probably due to division of fibers from Area 6, although, actually, release of emotional tension might cause such a drop in blood pressure. Once the initial state of confusion and semicoma passes away, which usually happens within

two or three days, the patient may become oriented to ward life and then be returned either to a mental hospital for suitable mental rehabilitation or to his home.

A great amount of psychotherapy is necessary immediately postoperatively. These patients must be approached in a positive psychologic fashion, rather than the negative. They must never be asked if they are having pain, because of the case of the chance of an affirmative response. In other words, a considerable period of reeducation, supervised by some intelligent person, must be carried out in order to supplement the anatomic interruption of these fibers.

The *operative mortality* of prefrontal lobotomy is low. Deaths which occur following this operation are usually due to hemorrhage, or due to marked cerebral softening, secondary to hypotension upon the operating table which is permitted to continue over too long a period of time. It is believed that the operative mortality should be much less than one per cent since in a series of over one hundred prefrontal lobotomies there have been no deaths.

The *morbidity* is not alarming. The confusional and vegetative state which immediately follows the operation fortunately clears up rapidly. There is one complication which must be thought of and about which the family must be warned. A certain number of these patients will suffer from convulsions due to cortical damage at the time of surgery. This is in direct proportion to the amount of cortical damage done by the surgeon. It is believed that this danger is overrated since there have been no convulsions following lobotomy in the series described.

The complaint is common that these patients are intellectually deprived following the surgery, in that they are reduced to a vegetative state and that it is impossible for them to carry on a normal life or the essential earning of a living.

It is true that patients do suffer an intellectual deficit following bilateral frontal lobotomy. This deficit, however, may be, by judicious surgery, reduced to the point where intelligence is not markedly altered and social behavior is still acceptable. There are, in this series, numerous patients who have returned to their jobs, some of whom have fairly responsible positions. By the

same token, however, there are also numerous patients who could by no stretch of the imagination be termed normal and who are not socially acceptable, although the more violent behavior pattern has been altered so that they can be cared for in the home.

It is believed that those who can be changed from a very distraught, violent agitation, with much disturbance of the affect, into tractable, mild, calm individuals certainly merit the procedure. There is, however, a marked loss of emotional response, even beyond the loss of the more violent peaks of emotion. These patients have very little drive, so that the possibility of suicide, murder, and aggressive acts are greatly reduced. Narcotic addicts have been altered so that there is no desire for drugs; this has also happened to at least one alcoholic.

It is believed that one of the greatest needs of humanity, aside from religious faith, is that of relieving intractable pain due to malignant disease, as well as relieving the natural apprehension of approaching death. I feel very strongly that prefrontal lobotomy offers a great deal in these respects. Since euthanasia is neither acceptable, nor sensible, it seems to the surgeon that some procedure which does not reduce intelligence, but will give relief of pain, no matter where situated, and which will do away with fear and emotional tension, would be of great benefit to that portion of humanity doomed to die from malignant disease.

Accordingly, this procedure has been carried out upon numerous patients suffering from cancer and allied conditions which will cause their painful death in a matter of a few months. Almost universally we have not regretted the decision or the operation. Addiction to narcotics has been no barrier to this procedure since the need for narcotics has been done away with. This is not true of other pain relieving operations. The apprehension of death is also removed.

There have been many *variations* and attempts at refinement of this operation. *Unilateral* prefrontal lobotomy has been attempted many times, particularly by Scarff of Columbia. He, however, has had less good fortune in his results than those doing the bilateral operation. His good results in the relief of pain have been about sixty per

cent. The good results in the relief of pain by the bilateral procedure is near the figure ninety per cent. *Topectomy*, or the undercutting of certain frontal gyri, has also been attempted so that the intellectual deficit, inevitable with the bilateral procedure, can be avoided. The deficit has been avoided but the underlying pathologic processes have not been relieved consistently by this procedure. At the present time there has been a great deal of work done, and more is being done, upon the frontal lobes and the temporal lobes by undercutting the temporal or frontal cortex to relieve psychomotor epilepsy. We have one notable case wherein all psychomotor epilepsy, characterized by typical grand mal seizures, but with a diagnosis of psychomotor epilepsy borne out by electro-encephalographic findings, has been relieved by prefrontal lobotomy. At the present time, even though the present procedure of bilateral complete prefrontal lobotomy destroys more fibers than is probably necessary, causes more side effects which are adverse, and reduces the intellectual deficit below the desired point, it still remains the procedure of choice in treating these conditions. Further delineation of psycho-physiology will undoubtedly allow us to divide fiber tracts only directly involved and possibly spare others which might obviate the intellectual deficit so distressing at the present time.

In conclusion then, the operation of prefrontal lobotomy is a new procedure, based upon recently acquired anatomic and physiologic knowledge of the frontal cortex and its interrelation with the dorsomedial nucleus of the thalamus. It is believed that intelligence may be preserved while emotion can be done away with by division of the frontothalamic radiation. The psychiatric conditions which might be an indication for prefrontal lobotomy, failing more conservative therapy, are those of the obsessional and delusional states with agitation and affective disorders. The relief of intractable pain due to malignant disease is one definite indication for prefrontal lobotomy when it is impossible to relieve such pain by the usual, more accepted procedures. The technique, mortality, complications and variation of the operation have been discussed. It is felt strongly that, when reasonably used, it has a permanent place in the neurosurgeons' and the psychiatrists' armamentarium.

X-RAY THERAPY INDICATIONS AND CONTRAINDICATIONS

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Recently, a medical man, a general practitioner, who was also a surgeon, and I, a radiologist, looked at a shoulder film. The medical man asked if anyone saw a bursa. No bursa was seen on the film. "The patient had definite symptoms and physical findings of acute bursitis," the medical man remarked. "How would you treat him?" I asked. The medical man replied that heat, salicylates, vitamin B and rest would be the treatment. I repeated the question to the surgeon. "I would use injections and heat, and, if they failed, operate," he stated with finality.

I commented on this particular x-ray report that "although no bursa was seen, perhaps with such a clear-cut history it might be advisable to give the patient three or four x-ray treatments." The partner of one of the individuals censured me severely, saying that when they wanted my advice, they would ask for it. In retrospect, I am sure that I should have said "Negative" on the report and let it go. But, having treated a good many cases of bursitis successfully with deep x-ray therapy, I was sincere, as were the other doctors. We are all biased to some extent, depending on which way we look at the "elephant."

The following is a partial list of conditions, with indications and contraindications, in which superficial and deep x-ray therapy may be used.

1. Bursitis: It is realized of course, that all cases simulating bursitis are not bursitis. For instance, a ligament may be torn; and x-ray in this instance would be without reason. X-ray therapy has been used in this office in over 200 cases of bursitis. Acute bursitis usually responds well to several x-ray treatments. Authorities like J. Albert Key have stressed its value. Cases which have shown calcification also show response. Again, benefit seems proportional to the duration of symptoms, whether calcified or not. If symptoms have been present longer than several months, x-ray is of less value. It is usually useless to treat the so-called "frozen shoulder." Recently, we treat-

ed the largest calcified bursa I have ever seen. This was in an elderly woman. Operation was contraindicated. Everything else had been tried. She became pain free after several treatments. It should be stressed that nearly always there are associated osteoarthritic changes of the spine.

2. Keloids: These are usually helped in proportion to the time interval that they have been present. Some keloids appear without any previous trauma. Many follow abdominal and other incisions. We all know how frequently they occur in burn scars, but one must be careful in treating them. Nearly all keloids which are older are painful, and cause itching, burning and disagreeable sensations. Today, even the oldest keloids may be helped and the patient made more comfortable. Treatment is inexpensive.

At times, x-ray should follow surgical removal of keloids.

3. Hemangiomas: Here I refer to the elevated, strawberry or the cavernous types. The "port wine" stain and the non-elevated types should not be treated with x-ray. In our office, we happen to use a "half strength" radium plaque in practically every location except the eyelids. It is used only every three months at a cost of \$15.00 per treatment. Thus, nature has a wonderful chance to do its part. Since using the plaque, we have never had a bad result. Many are treated only once or twice, seldom over four times. Radon seed are used at times in hemangiomas of the eyelid. Although we have never seen any danger from this, extreme care must be exercised. Surgery has a definite place in treatment of hemangiomas, particularly the larger cavernous type. Injection treatments are sometimes used with great success, especially around the eyelid.

One of the criticisms of irradiation in treatment of hemangiomas has been epiphyseal injury. While undoubtedly this can happen and should always be kept in mind, we have never had it happen and have been told that with the "half strength plaque,"

it is most unlikely. I do not pretend to know which hemangiomas will heal without treatment. We naturally prefer to treat them early, as they are more radio-sensitive at this time.

4. Recurrent Boils and Adenitis: I refer to such as recurrent boils in the axilla and cervical adenitis. Penicillin and various other drugs have done much to make treatment of these conditions with x-ray unnecessary. If they fail, a few x-ray treatments are still helpful at times. Eradication of foci of infection is considered a routine measure. Caution should always be exercised to make certain that an enlarged gland is not a metastasis.

5. Acne Vulgaris: It should be emphasized that it is seldom, if ever, necessary to employ x-ray therapy in the fourteen or fifteen-year old child. Paying attention to diet, scalp, and cleanliness and basic acne prescriptions will usually do the trick. In the nineteen and twenty-year old group, vitamin A, thyroid and other hormones are frequently added. Here, a few x-ray treatments are an extremely beneficial adjunct in a disease which can be very recalcitrant.

6. Pruritis of the Rectum and Vulva: In these it is essential to rule out monilia, trichomonas, fungi, secondary allergic manifestations of fungi and contacts as soap, nylon and lubricants. Many of these cases are functional. Again, a few superficial x-ray treatments, with proper soothing or stimulating medication, give excellent results in a most uncomfortable situation. Those patients below menopausal age with menstrual irregularity have given our poorest results, regardless of certain hormones that have been used.

7. Verruca Plantaris and Verruca: Certain types of verrucae, such as the plantar wart, are troublesome, we all agree. Proper arches, vitamin A and bistrimate are among the various treatments. Eighty to eighty-five per cent of plantar warts may be eradicated by superficial x-ray therapy in from one to two treatments. I do not know the answer to those that do not respond. Podophyllin, carbon dioxide snow, salicylic acid, trichloroacetic acid and simple desiccation have not solved the problem in our hands. We all know that on occasion warts will leave without our knowing why. We also know that occasionally they will also return

after we have completely removed them, although they have been gone for a period of time. We have removed several and had fifty disappear at the same time.

The ordinary wart which has been burned out previously by the doctor and tends to recur is especially amenable to x-ray treatment. I refer particularly to those around the nail beds which are most troublesome and painful to desiccate. We wish to commend treatment of these highly. It is imperative to learn that legs which have warts on them must not be shaved.

8. Fungus Infections: Fungus infection of the toes and other parts of the body is most helpfully treated at times, and this is especially so in the inflammatory phase. Here again, proper medication is essential, and results have been excellent.

9. Paronychia of the Nails: This may be due to a fungus or otherwise. Here, the treatment is slow and not guaranteed. Treatment must be persistent. Ammoniacal silver nitrate has recently been added to the armamentarium. Ammoniated mercury, iodine, salicylic acid and potassium permanganate have long been fairly standard treatment. I believe ammoniacal silver nitrate is supposed to help monilia and aspergillus infections principally. Of course, systemic conditions, such as lack of thyroid, must be kept in mind in various nail diseases.

10. Dermatologic Conditions in General: This list includes lichen planus, neurodermatitis and several others. In many, the causes cannot be determined. Appropriate medication must be used. In addition, x-ray therapy is sometimes almost essential.

11. Precancerous and Cancerous Skin Conditions: Many precancerous conditions, such as the various types of keratoses, may be removed with the electric needle. Many which are larger, however, may be treated with x-ray once, and eradicated for life. Results have been excellent. Skin cancer has been our fort of survival. Here, we believe x-ray has done its greatest good. The results on the whole have been wonderful. In no instance, of which we are aware, in approximately 4000 cases of skin cancer treated originally, has life been lost when there has been no metastasis present at the time of first treatment. Cancer of the lip and intra-oral cancer, again without metastasis when

first seen, have been successfully treated many times. In this latter group of cases we have always refused to treat individuals who continue to smoke.

It should be emphasized that desiccation to remove excessive tissue has been used a good many times along with our x-ray treatments. This is simply to give a flatter and easier surface to work with. A few that we have treated have had to be excised later because of radio-resistance.

12. Other Conditions We have not gone into the subject of carcinoma of the cervix. We wish to state, however, that it is better treated by x-ray and radium, according to most authorities.

No one can be certain of the value of post-operative x-ray therapy in Grade I breast cases; that is, where the lesion is localized, and there is no evidence whatsoever of metastasis. In Grade II cases, where there is metastasis to one or several nodes in the axilla, I would consider deep x-ray therapy imperative. In Grades III and IV, deep x-ray therapy without surgery will suffice many times. Surgery may or may not be combined with irradiation. Certainly, in cases of severe metastasis, surgery may be entirely useless.

There is definite value at times in removal of ovarian function in the premenopausal group, especially in those with metastatic lesions. The selective use of estrogens and androgens is well known today by all and, of course, they are combined with x-ray or used instead of x-ray, as the case may warrant.

In conclusion, we have not been able to mention all diseases benefited by x-ray, especially the various palliative effects. An effort at palliation may prove to be life saving at times. As an illustration, I mention an example of postoperative metastasis from carcinoma of the breast. The metastasis was to the mediastinum and was proven by surgical biopsy. This was a forty-two year old woman who has been symptom free for two years now with a condition which was regarded as utterly hopeless, and for which no other treatment was given.

Recently, irradiation has been advocated in the treatment of thrombophlebitis, regional ileitis and osteomyelitis of the terminal tuft of the finger. The use of irradiation in these diseases is advocated by people of unquestioned reputation.

In apology, and apropos, is x-ray dangerous? Yes, it is. We have harmed approximately eight people that we know of in a period of twelve years. All were skin cancer patients except one who had a verruca plantaris. After an exceedingly rough time, the patient got entirely well, as did the verruca. In defense, not a day of work was missed by the patient. We did not use good judgment in treating this mosaic type of verruca. We realized that we were taking a chance at the time we treated it. Trouble will surely result if the usual dosages are even slightly exceeded.

In regard to skin cancer patients, one, a physician friend of mine, has recently had much trouble. He was given as small a dose of x-ray as we have ever given to a case of skin cancer on the dorsum of the hand. Consultation was sought elsewhere before treatment was instituted. He had previously done much fluoroscopic work. He received a severe tendon injury as a result of x-ray. This necessitated the loss of a finger for a graft. I should not have treated him because of his previous exposure to an unknown amount of irradiation.

The others, on the whole, were bad cases of cancer, and I knew in practically every instance that a definite chance was being taken at the time we treated them. In most cases the patient was warned and was willing to take this chance. One of the patients had been previously treated elsewhere with irradiation but denied this to me until much later. Extreme caution must be used in treating cancer on the dorsum of the hand, of the scalp, of the ear and around cartilage in general. This is because of its poor blood supply.

I still believe x-ray therapy has accomplished some wonderful things, for I have seen them.

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ACUTE PERFORATED PEPTIC ULCER

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and

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This paper presents the review of 100 consecutive cases of acute perforated peptic ulcer operated upon at the Lloyd Noland Hospital of the Tennessee Coal, Iron and Railroad Company from January 1938 to December 1949. There were seven post-operative deaths out of these one hundred cases operated upon. This is a mortality rate of seven per cent and compares favorably with that generally reported.

DeBakey's review showed the mortality rate of acute perforated peptic ulcer cases operated upon in the fourth decade of life to be 18.9 per cent; in the fifth decade 28 per cent. The deaths in those that were perforated for only six hours and operated upon within this interval of time was 10.5 per cent. In those cases surgically treated after being perforated from seven to twelve hours the percentage was 21.4. DeBakey's figures were obtained from an extensive review of the literature up to 1940 before the use of penicillin and streptomycin. The relatively high mortality rate reported before 1940 has been reduced somewhat during the past decade. This reduction in the postoperative mortality rate can be attributed to a distinct improvement in management. The mortality rate now following surgery for acute perforated peptic ulcer will generally run from five to ten per cent.

This series of 100 consecutive cases of acute perforated peptic ulcer operated upon with seven deaths or a mortality rate of seven per cent compares with that reported by Dr. Graham of Toronto. He reviewed 125 cases of perforated peptic ulcer operated upon with a death rate of 6.4 per cent. Bariatall of Oakland, California reports a consecutive series of 88 patients operated upon for acute perforated gastroduodenal ulcer with only one death, or 1.1 per cent post-operative mortality.

Hirschfield et al. proclaim the combination of penicillin and streptomycin should be used as an adjunct in treatment. It has been shown that infection, primarily intra-

peritoneal but also pulmonary, is the greatest factor which must be dealt with if the mortality rate is to be lowered. Four deaths out of seven in our series were attributed to extensive peritonitis with pneumonia, and/or atelectasis. One death was attributed to acute renal failure associated with peritonitis, subphrenic abscess and pneumonia. One patient died with findings of hypertensive cardiovascular disease, peritonitis and chronic glomerulonephritis. One death was due to acute ventricular standstill, cause unknown. This patient expired on the operating table in spite of cardiac massage. One death occurred in 1940; two deaths in 1941; one death in 1944; one death in 1945; one death in 1947, and one death in 1948.

Further analysis of our deaths revealed the majority of the patients had been perforated longer than ten hours before surgery. One patient had been perforated for three days before seeking hospital admission and surgery. Another patient had been ill for two days at home before being brought over a hundred miles through the country to the hospital. Most of the deaths occurred before the use of penicillin and streptomycin.

There are other factors that have helped in the past few years in bringing about a lower mortality rate in patients operated upon for acute perforated peptic ulcer. These adjuncts are improvement in anesthesia and anesthetic agents; frequent use of whole blood transfusions, and proper use of intravenous fluids as needed.

There is still controversy relative to need for drainage of the peritoneal cavity following repair of an acute perforated peptic ulcer. The controversy centers around whether the peritoneal exudate following perforation is sterile during the early hours after perforation. A number of authors maintain that the peritoneal exudate is sterile for from six to twelve hours following acute perforation. Others indicate that bacteria may be recovered from the peritoneal exudate with considerable frequency. Reports in the literature attest that, if swabs

are used to obtain samples of exudate for culture, bacteria will be recovered in only sixty-five per cent of the cases. However, the incidence of a positive culture can be increased to about eighty per cent if three to five cc. of the exudate are used.

Forty of our cases had drainage of the peritoneal cavity postoperatively. Penrose drains were used, and in most instances were brought out through a separate stab incision in the right lower quadrant of the abdominal wall. It is interesting to note that most of the cases that had drainage were operated upon in the interval from 1938 through 1942. Now it is felt that drainage of the peritoneal cavity is not necessary in the majority of cases of acute perforated peptic ulcer receiving surgical intervention. The difficulty or even the impossibility of adequately draining the peritoneal cavity is well known. A worthwhile routine procedure is the aspiration of exudate from the peritoneal cavity before the incision is closed. By use of suction, the subphrenic space, Morrison's pouch, the right and left paracolic gutters and the pelvic cavity can be largely cleaned of exudate and thus lessen the dangers of multiple abscesses and other complications.

The type of operative procedure performed in 96 of our cases consisted of a simple closure reinforced by a Lembert serosal suture and a tag of omentum snugly fitted over the site of closure. Four cases had excision of the ulcer with a plastic closure. It has been our opinion that an attempt should not be made to cure the patient of his ulcer when he is operated upon for acute perforation. The simplest procedure that can be carried out is a simple closure with or without drainage.

The majority of surgeons in America favor simple closure as the method of choice for the treatment of perforated peptic ulcer. Graham from Toronto states that there is no justification for debating the wisdom of doing a gastroenterostomy or a gastric resection in treatment of perforated ulcer. He is of the opinion that the operation should be so simple that it could be done by any medical man who has had even a modest training in surgical technique. The surgeon who is readily available, therefore, is the best surgeon to close an acute perforation. There are some surgeons, however, mainly

described in European medical literature, who are performing subtotal gastric resections and reporting good results for perforated peptic ulcer.

Strauss from Cleveland, Ohio relates a series of twelve consecutive cases of acute perforated gastroduodenal ulcers for which a subtotal gastric resection was done. Eight of these had resections without any deaths and with uneventful postoperative courses. Strauss briefly reviews the literature and observes that in Europe subtotal gastric resection for acute gastroduodenal perforations is the method of treatment in the majority of clinics. The first gastric resection for perforated gastroduodenal ulcer was performed by Haberer in 1929. Four years later Amos Grover wrote: "The common presence of multiple peptic ulcers in Germany and Central European patients with perforated peptic ulcer has encouraged German and Austrian surgeons to resect the stomach primarily. Such surgery not only cures the patient but is attended by a low mortality rate."

The list of European surgeons who prefer primary resection for perforated gastroduodenal ulcer is large. Of course they select their patients. The same factors influence the mortality rate for resection as they do for simple closure. The main deciding factor is the number of hours after perforation. Some favored radical operation in perforations up to six hours but not after nine hours. Some surgeons are guided by the degree and extent of the peritonitis and some by the general condition of the patient. Hans Neuffer concluded that a case resected within the first four hours has the same chance as one resected for chronic ulcer. His time limit for resection is ten hours after perforation and the age limit is fifty years.

Most, but not all, of the patients with an acute perforated peptic ulcer will give a history of peptic ulcer symptoms prior to the episode of acute perforation. The majority of our patients complained of sudden onset of epigastric pain which soon became generalized and seemed to remain so. The pain usually followed the ingestion of food and drink by a few hours but this was not true in all cases. The character of pain was so severe that the patient, as a rule, sought medical care soon after the onset. Almost invariably there was acute abdominal ten-

derness with rigidity which was maximal in the upper abdomen. Most of the patients complained of nausea and vomiting associated with the abdominal pain. The white blood count was generally elevated and would show a shift to the left. An x-ray of the chest, with the patient in the upright position, for free air beneath the diaphragm was taken in 93 cases and was positive in 56 cases or sixty plus per cent. For best x-ray results the patient should be kept in an upright or sitting position for about fifteen to twenty minutes before taking the roentgenogram in an effort to demonstrate free air beneath the diaphragm.

The differential diagnosis of acute perforated peptic ulcer is with appendicitis, acute cholecystitis, acute pancreatitis and sometimes a dissecting aneurysm. A ruptured peptic ulcer can produce typical findings of acute appendicitis because the exudate and irritating fluid may quickly flow down the right paracolic gutter and give tenderness and spasm of a marked degree largely localized in the right lower quadrant. There were three patients in whom a McBurney's incision in the right lower quadrant was performed primarily because of suspected appendicitis. The appendix was found to be normal in these cases and a right paramedian incision was then made, followed by simple closure of the perforated peptic ulcer. Cholecystitis may closely simulate a ruptured peptic ulcer. History and more localized physical findings of gallbladder disease help to differentiate this condition. It is important that a serum amylase be run within the first 24 hours when acute pancreatitis is suspected.

The age at which the perforations occurred varied from the youngest of 19 years to two cases at the age of 75. The age group can be broken down as follows:

Age 19 years	2 cases
Age 20 to 30 years	26 cases
Age 30 to 40 years	32 cases
Age 40 to 50 years	31 cases
Age 50 to 60 years	7 cases
Age 60 to 70 years	0 cases
Age 75 years	2 cases

The sex incidence in the one hundred cases was that which is generally reported. There were 95 males and 5 females. The majority of our patients were white males but 24 perforations were in Negroes. There

were 16 perforated gastric ulcers in this group and the largest per cent of these occurred in the colored patients.

One patient developed pyloric stenosis postoperatively and a gastroenterostomy was done on the twenty-second postoperative day.

The choice of anesthesia is also important in the surgical treatment of patients with acute perforated peptic ulcer. A spinal anesthetic was given in 93 of the 100 cases. This type of anesthetic was considered best in most cases. By use of India ink it has been demonstrated that with general anesthesia the dye was diffused to more areas of the peritoneal cavity than when a spinal anesthetic was given. The patient with a spinal anesthetic has less excursion of the diaphragm, the respiratory movements are smoother, and the peritoneal exudate is not scattered so widely over the peritoneal cavity. Also, a spinal anesthetic makes for an easier surgical technique.

We realize that our patients were not cured of their peptic ulcers by doing a simple closure. Our postoperative management is carried out with the assistance of the medical department and dietitian. When the patient is discharged from the surgical service he is followed by the medical department for any further treatment of his peptic ulcer as indicated. Also later gastric resection may become necessary. Generally, one might expect the following end results in a series of cases treated by simple closure or pyloroplasty:

1. Five to ten per cent will be completely cured.
2. Sixty to seventy per cent will require further medical treatment for control of their ulcer symptoms.
3. Fifteen to twenty-five per cent will require further surgery or hospitalization for relief from their ulcer symptoms.

SUMMARY AND CONCLUSIONS

1. One hundred consecutive cases of acute perforated peptic ulcers are reported. There were seven postoperative deaths, a mortality rate of seven per cent. Sixteen of these cases were acute perforated gastric ulcers.
2. Simple closure is considered the treatment of choice for perforated peptic ulcers.
3. Factors that tend to lower the mortality

rate for this surgical condition are discussed.

4. Following operation, the patients require the medical supervision or observation that any peptic ulcer case requires.

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PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.
Gadsden, Alabama

This patient, M. R. P., age 7 months, was doing well until the night before admission to the hospital. She was fretful and cried quite a good deal. In the early morning it

was noticed she had petechial hemorrhages over the entire body and was practically moribund. She died before treatment could be started.

Clinical Diagnosis:

Meningococcemia (Waterhouse-Friderichsen syndrome).

Comment: Adrenal hemorrhages are seen in the newborn; they may occur at any age, usually in association with some infectious disease. Clinically significant hemorrhages are usually massive and are practically always bilateral.

The condition in newborn infants is more frequent than generally supposed; it has been reported in one per cent of children dying at, or shortly after, birth. The immediate cause is usually a prolonged or difficult labor, particularly with a breech presentation.

Postnatal adrenal hemorrhages may occur at any age but are most frequent in infants under one year. The condition is usually associated with meningococcemia but may occur with scarlet fever, pneumonia or some other infection.

The Waterhouse-Friderichsen syndrome can frequently be suspected if the condition is kept in mind. The sudden development of cyanosis and shock with hyperpyrexia, with or without gastro-intestinal symptoms or petechiae, is sufficient indication for treatment, which must be given promptly if it is to be effective. Sodium chloride and glucose (5% glucose in saline) should be given intravenously; parenteral administration should be continued until symptoms subside or until oral administration is feasible. Glucose is necessary to combat the hypoglycemia. Adrenal cortex extract should be given until symptoms subside—infants, 2-5 cc. every four hours; older children, 10-20 cc. every four hours. No arbitrary time can be set for discontinuing treatment. The development of edema is an indication of excessive salt and hormone therapy.

Postmortem examination performed at the Holy Name of Jesus Hospital by Dr. J. D. Bush gave the following findings:

Clinical Diagnosis:

Meningococcemia (Waterhouse-Friderichsen syndrome). The patient died before treatment could be started.

Final Diagnosis:

Blood—Meningococcemia.

Adrenal gland—Bilateral diffuse hemorrhage.

Skin—Petechial hemorrhage.

Lungs—Lobular pneumonia.

Brain—Congestion and edema.

Comment: This case shows a typical Waterhouse syndrome.

External Examination: The body is that of a well-developed, well nourished, female infant 53 cm. in length and 5½ kilograms in weight. The hair is light brown. The pupils are round, equal, and measure 6 mm. in diameter. The entire skin of the body shows petechial hemorrhages varying from 0.2 up to 1 cm. in diameter. There is no cyanosis, lymphadenopathy or palpable edema present. In the pericardial area there are five small holes 0.1 mm. in diameter.

Peritoneal Cavity: When the primary incision is made the peritoneal cavity does not contain adhesions or free fluids. The diaphragm lies at the 5th rib on each side. The liver edge is two fingers' breadth below the right costal margin.

Pericardial Cavity: The pericardial cavity contains approximately 10 cc. of yellow fluid.

Pleural Cavities: Each pleural cavity is free of fluid and adhesions.

Heart: Heart weighs 50 grams. The myocardial muscle is pinkish-red and about normal in thickness. The endocardium, valves and valve leaflets are normal.

Lungs: The left lung weighs 50 grams; the right, 70. The pleura is smooth and shiny. Underneath this there is a small hemorrhage. This hemorrhage extends into the lung parenchyma. On pressure the parenchyma of the lung is crepitant and does not ooze any blood. The lining of the trachea and bronchi is covered by a thin layer of mucus.

Liver: Liver weighs 70 grams. The capsule is smooth and glistening. The liver parenchyma shows many yellow irregular areas. The liver is filled with a golden bile.

Spleen: Spleen weighs 50 grams. The capsule is tense. On cutting section the parenchyma is dark red and the follicles are indistinct.

Adrenal Glands: The adrenal glands together weigh 40 grams. They are purplish red in color. On section the whole parenchyma of the adrenal glands is filled with blood.

Kidneys: The kidneys are equal in size and weigh 60 grams together. The capsule strips easily, revealing the fetal lobulations. On section the cortex shows normal markings. The pyramids are pink-red. Pelves and ureters do not show any pathology.

Urinary Bladder: The urinary bladder is empty and normal in size. Ureters, tubes and ovaries are normal for a female infant of her age.

Gastro-Intestinal Tract: The esophagus is normal, as is the mucosa of the stomach. Small and large intestines do not show any pathology.

Pancreas: Pancreas weighs 15 grams. It is yellow in color. It does not show any pathology.

Thymus: Weighs 20 grams and does not show any microscopic pathology.

Head: The scalp was opened in the normal way. No fractures or hemorrhages are found. Brain weighs 560 grams. The sulci are shallow and the convolutions are slightly flattened.

Spinal Cord: Was not examined.

Anatomic Diagnosis (Clinical):

Meningococcemia (Waterhouse-Friderichsen Syndrome).

Brain—Slight edema.

Liver—Fatty degeneration.

Adrenals—Diffuse hemorrhage of adrenal parenchyma (bilateral).

Skin—Hemorrhagic petechiae.

Physical signs may be absent with early activity or with indolent or deep-seated tuberculous lesions. Tumors, cysts, and deep-seated abscesses may give no significant physical signs. Roentgen examination usually discloses more extensive disease than has been expected from other methods of examination. It is the only method by which the diagnosis of miliary tuberculosis can be made, since these tiny parenchymal lesions produce no distinctive clinical signs.

Sputum tests, a positive tuberculin test, gastric washings, and serial X-ray studies will usually establish or exclude the diagnosis. One should never make the diagnosis from roentgenologic findings alone, no matter how "typical" the shadows appear.—*Am. Acad. General Prac., F. Kenneth Albrecht, M. D. April 1950.*

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THE ACUTE ABDOMEN

"The subject of the acute abdomen will always present an interesting challenge to the practitioner and surgeon alike. I have examined charts from the surgical services at the Cook County Hospital for a period of ten years, the purpose being to determine which diseases are most frequently mistaken in the acute abdomen. To my surprise I did not find fifty or seventy-five conditions which confuse us but rather six outstanding ones that we mistake most frequently. These six conditions are: (1) acute appendicitis, (2) acute cholecystitis, (3) perforated peptic ulcer, (4) acute hemorrhagic pancreatitis, (5) renal colic, and (6) coronary occlusion.

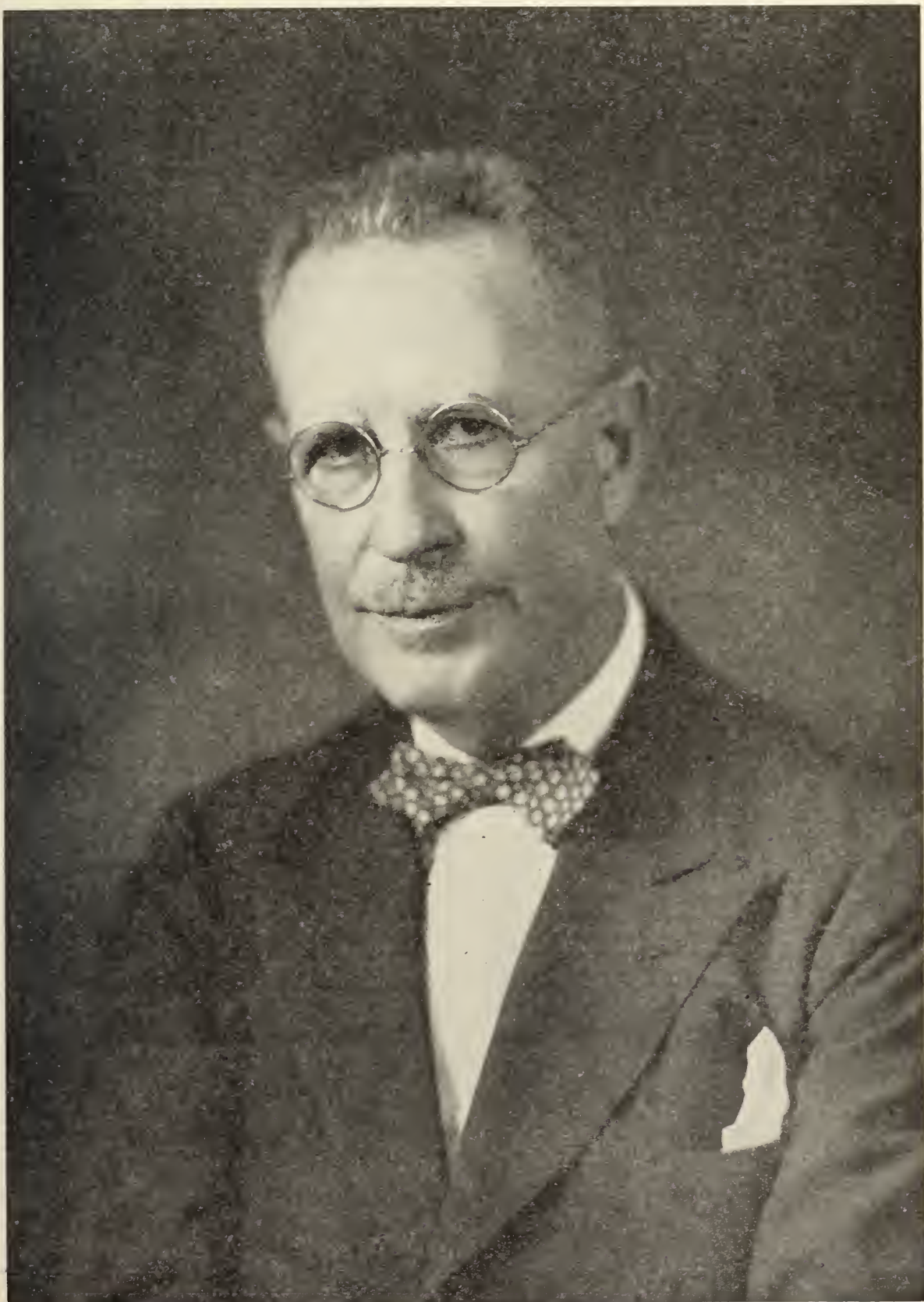
"There is a seventh disease which deserves special consideration, namely, salpingitis. Acute or chronic salpingeal disease is frequently associated with a perihepatitis which produces pain in the right upper quadrant (pseudo-gallbladder pain). Because of this, gallbladder explorations and other surgical procedures have been done in cases of salpingitis, resulting in danger to the patient and embarrassment to the surgeon."

The above is the opening paragraph of the inquiry by Thorek¹ into this widespread and ever-present condition. The author does not state the total number of charts examined, but since his examination covered the records from the surgical services at the Cook County Hospital for a ten-year period the number must have been very large indeed.

Thorek goes on to tell us: "We realize that many other conditions at times require differentiation in the acute abdomen, among them strangulated hernia, regional ileitis, mesenteric lymphadenitis, mesenteric thrombosis, ruptured ectopic pregnancy, ruptured graafian follicle, ileocecal tuberculosis, vasitis, torsion of the omentum, volvulus, intussusception, and so on, ad infinitum. However, when one misses one of these unusual conditions he does not feel quite so responsible or guilty as he would having missed one of the forementioned 'Big Six'."

The problem of acute abdominal conditions will, of course, continue to plague both

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T. BRANNON HUBBARD, M. D.
President of the Association
1951-1952

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medical men and surgeons for a long time to come. Improved surgical techniques, new and better laboratory tests, and diagnostic procedures will doubtless continue to diminish both mortality and morbidity but the eternal problem remains. And the lot

of practitioners who are confronted with this problem will never be an easy one. Studies such as those of Thorek are a step in the right direction and it is at least helpful to know that the chief causes of failure are limited to a very few pathologic conditions.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

I DON'T HAVE TIME

W. A. Dozier, Jr.

Director of Public Relations

"I don't have time." How often one hears that statement. In fact one can ask anybody to do or help do a job and the odds are pretty heavy that the answer will be, "I don't have time." Sometimes it is literally true that the person has a schedule that precludes taking on anything else, and such is true of almost every one at certain specific times. All of us this day and age seem to be trying to do too much, or at least we have begun to talk ourselves into believing that we have taken on more than we can handle. We long for the good old days when life was not so fast and everyone seemed to have or to find time to enjoy a little leisure. There is no denying that the pace of living has increased and perhaps that is why we so often think and say we don't have time.

A week or so ago an incident occurred which set off a thought chain, which thoughts added up to questioning whether or not one has or has not enough time to do many of the things he so often ducks. In other words, are we racing about and actually failing to do many things we could find time for?

The incident spoken of above happened like this. I was down in a small south Alabama town for a speech. After the speech various members of the audience came up, through courtesy, to speak to me. One lady introduced herself and explained that she was a visitor in town and just wondered if I knew Dr. Elmer L. Henderson, President of the American Medical Association. After a few seconds of chatting about Dr. Henderson the lady said, "You know, we feel as if

there is no one like him. Perhaps we have always felt that way, but recently he proved that our feelings were well placed. While on his tour of the medical installations in the Pacific, he took time to visit the boys from our home town. He brought back news to all of us about our sons."

Thinking back on that conversation, I began to realize that here was a good example of excellent public relations and a good incident of "I'll make time to do it." Dr. Henderson is a busy man. A comprehensive tour such as he made is a full-time undertaking for so long as it lasts, and it takes a tremendous amount of energy. Still Dr. Henderson made time available so that he could call on each of these boys. Yes, he talked with many of the leaders while out there, but the chats that did more for the profession were the ones with the sons of mothers in his home town.

From all of this arise some questions. Don't I have the time, or am I using this excuse as a blind? Am I deluding myself and perhaps others? Couldn't I find or make the time if I really wanted to? I have to have some recreation, but couldn't I also do this job? Most of all, am I budgeting my time and energies poorly?

It has often been said that if you want to get a job done, go to a busy man. That old saw is certainly true. The busy man finds time or makes time to get the job done. Perhaps each of us needs to be introspective for a few minutes. If we answer ourselves honestly, would we still say we didn't have time? Would we find that we could do the job by rearranging a few details? Are we budgeting our time and energies properly to get the most out of what is allotted to us?

TRANSACTIONS OF THE ASSOCIATION

1951 SESSION

Concluded

Last Day, Saturday, April 21

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 9:00 A. M. by the President, Dr. J. M. Weldon.

The report of the Board of Censors was rendered by the Chairman, Dr. E. V. Caldwell, Huntsville.

THE SEVENTY-SEVENTH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORTS AS A STATE BOARD OF MEDICAL EXAMINERS AND AS A STATE COMMITTEE OF PUBLIC HEALTH

E. V. Caldwell, M. D., Chairman

The State Board of Censors has the honor to submit to the Association its Seventy-Seventh Annual Report.

THE PRESIDENT'S MESSAGE

The President in his message to this Association has unconsciously paid tribute to himself by revealing the numerous activities that he has supervised and the tremendous number of demands that were made on his time and talents. The Committees of the Association have functioned well and the Board concurs in the commendations of the President for a job well done by the Committee members. The President has certain recommendations for consideration:

(1) The President recommends the continuation of the work of the Committee on Postgraduate Study and urges consideration of the feasibility of conducting seminars by the Medical College over long distance telephone to County Medical Societies at predetermined times. The Board calls this to the attention of the Committee on Postgraduate Study for consideration and action.

(2) In discussing the activities of the Committee on Medical Service and Public Relations the President recommends creation of grievance committees at the county level with one State committee. The Board calls attention to the action of this Association at a former session in approving grievance committees at the county level in those counties which so desired. Several such committees have been set up and it is at the discretion of every Society to take action. The Board reiterates its endorsement of this program.

(3) The Board concurs in the suggestion that each retiring President be presented with a past-president's pin and recommends that the Secretary of the Association be instructed to obtain such pins for all living Past-Presidents and to have such an award available for presentation annually.

(4) The proposed Medical Committee for Better Government composed of Past-Presidents of the Association to keep abreast and study federal legislation is worthy but the Board feels that the Committee on Medical Service and Public Relations is now charged with this responsibility and that the Committee should call on all experienced members for aid and advice. Past-Presidents, with their store of knowledge, should certainly be called on by Committee and the Board so recommends.

The Board recommends adoption of the President's Message as a whole.

The Association concurred in the Board's recommendations.

REPORTS OF VICE-PRESIDENTS

The four Vice-Presidents report activity throughout the State, with at least one divisional meeting in each district. Programs were excellent and, by and large, attendance was good. The problem of County Society meetings with only a limited number of members can frequently be answered on a two or three county basis, and these should be encouraged. Dr. Finney suggests the combining of divisions into one northern district and one southern district on the ground that a better meeting could be held and with larger attendance. This would entail a change in our Constitution, and, according to its provisions, the recommendation must lie over until next year.

Dr. Finney further recommends that each county in a district be assessed a fair and pro rata share of the cost of district meetings so that small Societies would not hesitate to invite the meeting. The Board feels that the financial burden should not rest on a few, and suggests that each county appropriate to a "district meeting" fund.

The Association adopted this portion of the Board's report.

REPORT OF SECRETARY-TREASURER

The report of the Secretary reveals that ninety per cent of the physicians in the State are members of their local Medical Societies and of the Association, which is a healthy state of affairs.

The Secretary recommends that dues of members and Counsellors who enter military service be remitted during their period of service. The Board so recommends.

The uncertainty over American Medical Association dues should be cleared up by perusing the Secretary's report, and the Board calls to the attention of the Association the American Medical Education Foundation with its aim of promoting medical education through voluntary donations.

The election of William Crawford Gorgas to the Hall of Fame is very gratifying to every Alabamian, and the committee responsible for presenting his achievements should be congratulated. The Board recommends to the Association that the \$86.18 left from the fund collected to place portraits in the Medical College of Alabama be contributed to the fund to purchase a bust of General Gorgas, and that to this be added the sum of \$913.82 from Association funds, making a total of \$1,000.00.

The finances of the Association have been audited and found in good shape. There was a slight excess of receipts over expenditures which is satisfactory.

The Board recommends adoption of the report.
The report was adopted.

COMMITTEE ON PUBLICATION

The circulation of the Journal continued to grow and the high standards of excellency were maintained. Financially the Journal broke about even which indicates good business management. The Board recommends adoption of the report.

The Board's recommendation was concurred in.

REPORTS OF COMMITTEES

MEDICAL SERVICE AND PUBLIC RELATIONS

The Committee reports a year of activity and progress. Its detailed report should be carefully studied by all members. The only major legislation to reach the voting stage was the President's Reorganization Plan No. 27, which was defeated with Alabama's Congressmen voting against it. The Committee was active on many fronts in Alabama and is making several recommendations to the Association.

To meet the need of medical care in certain areas the Committee proposes the following resolution:

"WHEREAS, Many communities and even counties in Alabama have only one physician; and illness and death often produce conditions of dire medical need in such communities; and

"WHEREAS, Physicians who serve these communities find it impossible to leave their practice to procure much needed rest and to pursue post-graduate study; and

"WHEREAS, Dr. Tinsley Harrison, Acting Dean of the Medical College of Alabama, has recognized this medical need and suggested that doctors taking intern and resident training in the Medical College Hospital might be allowed to practice in these emergencies as a part of their internship or residency; for one to three months spent in gen-

eral practice would be valuable training for interns, and even longer periods would be valuable for residents taking specialty training; and

"WHEREAS, Some physicians might be induced to return to general practice if they became acquainted with its many desirable aspects; and

"WHEREAS, The medical profession of Alabama, recognizing its responsibility to supply medical service to people of Alabama, should adopt any reasonable plan to meet this responsibility; therefore be it

"Resolved, That the Medical Association of the State of Alabama, in cooperation with the Medical College of Alabama, adopt the following means of meeting this problem:

"1. The Medical College of Alabama to enroll a larger number of interns and residents in its teaching hospital.

"2. The Medical College to include in its program for training interns and residents as an elective subject periods of training in general practice.

"3. Interns who are pursuing their first or second year of training to be available as assistants to physicians in communities where such need arises, or to supply temporarily in communities without a physician—acting under the supervision of designated members of the faculty of the Medical College of Alabama or the chief medical officer of the hospital where the internship is being served.

"4. Residents who have completed one year of internship and have met the requirements of the State Board of Medical Examiners to be available for service in communities where no licensed physician is then in practice, or for locum tenens—and without jeopardizing their residencies.

"5. The Secretary of the State Board of Medical Examiners to act as a clearing house for requests for such service and attempt to arrange the service as far as means are available.

"6. Those physicians desiring the service of an intern to act as an assistant to agree to provide facilities for practice, living quarters, and a fee of \$200.00 per month.

"7. A physician who is the only practicing physician in a community and who wishes to leave his community temporarily or any community which has lost the service of its physician and wishes to secure the service of a resident physician to agree to supply office facilities for practice, the use of an automobile, and guarantee payment of \$400.00 a month or above in fees.

"8. Any hospital in Alabama approved for the training of interns or residents to include in its training program such elective courses in general practice and to make its trainees available for the above service."

The Board recommends the adoption of this resolution. The Medical College has ascertained that up to one month in practice may be considered as a part of an approved internship. Resi-

dents should qualify for licensure and when so licensed may practice anywhere in the State. The Council on Medical Education and Hospitals of the American Medical Association has already approved the principle of preceptorships whereby senior medical students may work with approved physicians during their vacation periods, such training to be under the supervision of the Medical College of Alabama, and in no instance is such student permitted to practice independently.

The resolution was adopted.

Resolution on training medical aides:

"WHEREAS, There is an acute shortage of graduate technicians in Alabama and this shortage is likely to increase due to the Hill-Burton program; and

"WHEREAS, The Medical College of Alabama now graduates twelve to fifteen technicians each year but with a few more facilities and personnel could train a much greater number; and

"WHEREAS, There is a great need for medical aides throughout the State; and

"WHEREAS, These medical aides do not need a college degree but do need training in the basic office procedures which can be done under the supervision of the physician; therefore be it

"Resolved, That the Medical Association of the State of Alabama request the Medical College of Alabama to increase its personnel and facilities enough to graduate fifty technicians per year; and be it further

"Resolved, That the Medical College of Alabama institute a program for the purpose of training medical aides, the Committee on Medical Service and Public Relations to work with the College on determining the subject matter to be covered in the course."

The Board recommends adoption of this resolution.

This resolution was adopted also.

Resolution on economy programs in Washington:

"WHEREAS, We as a people and as a government are faced with a critical international situation wherein we are striving for the very existence of our ideals, philosophies, and our way of life; and

"WHEREAS, The national government is spending at an ever increasing rate the money which belongs to the people and which is attained through taxation; and

"WHEREAS, There are those in Washington who seem to be happy to use the present situation as a means of furthering their goal of socializing to an ever greater extent the economy and production of our country; therefore be it

"Resolved, That the Medical Association of the State of Alabama goes on record as opposing the reckless expenditures of the people's money, the levying of unnecessary taxes for non-essentials, and any form of socialization of any segment of business, profession or industry; and be it further

"Resolved, That this Association endorses an economy program for the national government

and for the spending by that group; and be it further

"Resolved, That a copy of this resolution be sent to all Senators and Congressmen who represent Alabama in Washington."

The Board recommends adoption of this resolution.

The resolution was adopted.

Resolution on standardization of hospitals:

"WHEREAS, in 1950, the American College of Surgeons which had previously handled the function of standardizing hospitals found that it was momentarily impossible to continue this function, and

"WHEREAS, the American Hospital Association, which is a layman's organization not bound by the oath and tradition of American medicine, on its initiative offered to assume this standardizing function, and

"WHEREAS, This move was temporarily thwarted; and

"WHEREAS, At the 1950 interim session of the American Medical Association, this subject did not reach the floor of the House of Delegates; and

"WHEREAS, Rumors of a compromise agreement with the Hospital Association still persists; and

"WHEREAS, The effecting of a compromise dividing the responsibilities between the medical profession and the American Hospital Association would be a deadly blow to the medical control of hospitals; therefore be it

"Resolved, That the Medical Association of the State of Alabama requests that the American Medical Association, the organization representative of all physicians, assume full responsibility for the standardization of professional practice in hospitals and that its committee for this purpose include specialists, general practitioners and medical educators; and be it further

"Resolved, That the delegates from this Association to the House of Delegates of the American Medical Association be informed of this request and be instructed to work for its adoption by the House of Delegates of the American Medical Association."

The Board recommends adoption of this resolution.

It was adopted.

MENTAL HYGIENE

This Committee reports continuing progress in the field of psychiatry and mental hygiene. One of the forward steps has been the establishment of a school for training in psychiatric nursing at Bryce Hospital so that undergraduate nurses no longer have to go outside Alabama for this training. Expansion in community mental health services has been steady.

The Board recommends adoption of the Committee's report.

The report was adopted.

MATERNAL AND CHILD HEALTH

As in past years this Committee has been one of the most active of Association committees. The Board feels that its members are due the sincere thanks of the Association for their continuing efforts to improve the quality of maternal care and to reduce the unnecessary deaths associated with childbirth. The Committee has completed a five-year study of maternal mortality by counties and hospitals which will be published by the Health Department and which merits careful reading by every doctor.

Progress has been made and is reflected in a lower maternal mortality. Fourteen counties established prenatal clinics during the year, leaving only thirteen counties without this organized service for the low income groups.

The Board recommends adoption of the Committee's report.

The Association adopted the report.

CANCER CONTROL

The Committee report summarizes very well the progress made in cancer control this past year. The program of the official agency has been curtailed due to being caught between the fixed appropriation and rising costs. Not all indigent cancer cases can be taken care of in the five clinics, so there has had to be a selection of cases and no selection can be totally fair. The clinics are doing an outstanding job on the restricted basis.

The educational program for physicians has made progress. Our State Journal, particularly in its April issue, has published excellent papers, while every physician has been sent the Cancer Bulletin, which is an outstanding publication. More recently the American Cancer Society has put out CA—a quick summary of new advances, and has furnished copies to all physicians.

The American Cancer Society has done much to make the lay public cancer conscious, and has worked in close harmony with the State clinics. The research program is extensive and we hope will one day be productive.

The adoption of the Committee's report is recommended.

The Board's recommendation was concurred in.

POSTGRADUATE STUDY

Postgraduate assembly groups were held at eight points during the year and indications are that this is the most successful approach yet tried in Alabama. The staff of the Medical College presented the various subjects and led the discussion periods. The Committee desires to continue this program this coming year.

The question of financing this educational work is of concern to the Committee. Grants through the Health Department can only be paid by voucher, and the Association Treasurer feels that a similar procedure is his responsibility in disbursing Association funds. Apparently the Committee has sufficient cash on hand to take care of

its secretarial needs for this coming year, and the Board therefore recommends that field vouchers be submitted as in the past—to the State Health Department up to \$1500.00 and then to the Association Treasurer up to \$1000.00.

The Board recommends adoption of the report.

The report was adopted, with the Board's recommendations.

ANESTHESIOLOGY

The specialty of anesthesiology as a medical career is drawing increasing attention from young physicians. The current national picture has, of course, upset the plans of many recent graduates, but if the best surgery is to be available high quality anesthesia is a must, and that means medical administration.

The interest of the Committee is to be commended and the Board recommends the adoption of the report.

The Association concurred in the Board's recommendation.

TUBERCULOSIS

The continuing drop in mortality from tuberculosis is encouraging but at the same time there is an increase in the number of known cases so that the problem of hospitalizing active cases is more acute than ever. With a fixed appropriation and with every sanatorium filled to capacity, the per diem allowance from the State has been decreasing in the face of rising maintenance costs. A proposal to raise the State allocation to \$2.00 per patient day is being made and should have the support of the Association. More hospital beds are needed but if the problem of maintenance is met they will be built. State-aid funds are available but the federal allocations under the Hill-Burton Act have been curtailed. The Board urges study of the Committee report and recommends its adoption.

The report was adopted.

COMMITTEE ON INSURANCE

The Committee to Study Prepaid Hospital Insurance appointed by the President in accordance with the resolution adopted at our last annual meeting, in addition to its assignment, has sat with and been a part of the larger Committee appointed by the President to study the question of a service contract with the Hospital Service Corporation of Alabama.

The two Committees have done an outstanding job in their assignments. By and large the Blue Shield program in Alabama compares very favorably with other Blue Shield plans and with commercial insurance. The time interval was not sufficient to arrive at definite conclusions regarding a service contract and the Committee, therefore, requests an extension of time and recommends no change in existing plans at this meeting of the Association. The Board concurs in this request.

The Association also concurred.

COMMITTEE ON THE CORONER SYSTEM

The Committee has worked closely with attorneys and with health officers in trying to find an answer to the present unsatisfactory coroner system whereby a coroner is elected, and the question of his qualifications is of minor importance. A medical examiner system which would replace existing coroners and would include the medicolegal work of the State Toxicologist has been outlined and will be presented to the Legislature. The Board believes a bill along these lines is worthy of support and commends the Committee for its activities.

The Association joined in the commendation.

COMMITTEE ON NURSE RECRUITMENT

The Board recommends adoption of the Committee's report, including the recommendation that the incoming President appoint a representative to work with the joint committee on recruitment of nurses.

The report was adopted.

COMMITTEE ON INDUSTRIAL MEDICINE

This Committee was discontinued this year and no activity was carried on. In view of the national situation on industrial expansion, however, and in conformity with other states the Board recommends that a committee of three be set up as a standing committee of the Association.

The Board's recommendation was adopted.

STATE AID FOR THE HOSPITALIZATION OF INDIGENTS

There will be presented to the Legislature this year a bill to set aside twenty per cent of a proposed one per cent sales tax to be used for three purposes: (1) aid to the Medical College, (2) subsidy for tuberculosis sanatoria, and (3) hospitalization of indigent sick in any licensed hospital in the State.

The proposed bill would require a contribution from each county to match the State funds available and each county would have a hospitalization committee to determine the eligibility of patients. Administration of the program would be the responsibility of the State Health Department.

This Association has previously approved the principle of county care for indigents and this new proposal retains the feature of county control of its own affairs. The need of the Medical College is obvious, while the hospitalization of the tuberculous has become increasingly burdensome on local agencies. The Board is of the opinion that, if increased taxation is being enacted, care of the medically indigent, in so far as hospitalization is concerned, should receive the backing of the medical profession.

If and when the finished bill is introduced into the Legislature, the Board feels that it should be the duty of every Medical Society and every individual member of the Association to support and aid in the passage of this bill.

LEGISLATION

Congress failed to enact any major health legislation during the last Congress and the present sitting has not completed the study of proposed bills. A Local Health Services Bill has passed the Senate and is having House Committee hearings now. Aid to medical education is also having Committee hearings. Health insurance will apparently not be seriously considered this year.

Our State Legislature meets in May and will have many problems facing it. Of particular interest to the Health Department, of course, are the finance bills. The Department needs augmented funds for its routine activities to counterbalance increases in the cost of operation; and if real progress is to be made in the fields of tuberculosis, cancer, and mental hygiene, money must be available. The present ceiling on salaries for trained professional personnel should be raised.

The Coroner Bill and the Bill to Provide Hospitalization for the Indigent were discussed in foregoing paragraphs.

The present scholarship program, whereby one scholarship per year is available to each county, is not an equitable one. Students from certain counties may obtain this aid regardless of financial standing, while others from the larger counties are denied assistance. Legislation to change this program will be presented, probably along the line of the Mississippi plan, with grants-in-aid for those agreeing to practice in rural areas. The Board believes that some such scholarship program is indicated.

REPORT WITH REGARD TO FEDERAL AGENCIES

Program planning on projects financed by grants from Congress is often difficult due to the uncertainty of funds. For example, the budget for the fiscal year beginning July 1, 1950 was not adopted until October and, when lowered appropriations were made, cuts had to be taken to balance the over-expenditure of the first four months. The cut in monies available for hospital construction was particularly severe and several Alabama communities were forced to postpone their plans for hospitals. Hospitals under construction will be completed and are being largely financed out of appropriations already made but the policy on future hospitals of financing construction out of more than one federal budget year may have to be abandoned.

Relationships with the federal administering agencies remained on a cordial basis and State planning was accepted.

HOSPITAL SERVICE CORPORATION

Two of the Association's representatives on the Board of Trustees of the Hospital Service Corporation will complete their terms on December 31, 1951. The Board recommends that these two representatives, Dr. J. E. Moss of Mobile and Dr. J. P. Collier of Tuscaloosa, be reappointed for a three-year term beginning January 1, 1952.

The Association agreed with the Board in its recommendation.

ORDINANCES AMENDED

MISCELLANEOUS APPROPRIATIONS

Amend Section 3 of the Ordinance entitled "Miscellaneous Appropriations" to read as follows:

Section 3. An amount sufficient to cover the expenses of the Association's delegates to the American Medical Association.

The Board recommends adoption of this amendment.

The amendment was adopted.

TIME FOR MAKING NOMINATIONS TO
FILL VACANCIES IN COLLEGE OF COUNSELLORS
(INTRODUCED BY DR. HUGHES KENNEDY, JR.)

Amend Ordinance of Association entitled "Notice of Time and Place for Assembling of Delegates and Counsellors for Purpose of Making Nominations for Vacancies in College of Counsellors" to read as follows: "The time for assembling of Counsellors and Delegates for making nominations for vacancies in the College of Counsellors shall be on the second day of each annual session on adjournment of the morning session and immediately following announcement of such vacancies by the Secretary of the Association."

The Board recommends adoption of the amendment.

The amendment was adopted.

RESOLUTIONS

INTRODUCED BY 38
COUNTY MEDICAL SOCIETIES

WHEREAS, The statute of limitation in damage suit cases has been reduced to one year in the State of Alabama, and

WHEREAS, The statute of limitation in medical practice suits remains at a six year period in the State of Alabama, now therefore be it

Resolved, By the Medical Association of the State of Alabama that it request the State Legislature at its next regular session to enact the necessary legislation to remove this inequity from the medical profession, which has already been removed from all other agencies and individuals operating their businesses as units of society within the State, and be it further

Resolved, That the proper committee of the Association confer with members of the Legislature about this matter and urge them to support a bill that will place physicians in the identical position as industry and commerce and all other citizens under similar circumstances.

The Board recommends adoption of this resolution.

The resolution was adopted.

BY MOBILE COUNTY MEDICAL SOCIETY

WHEREAS, Almighty God has deemed it fit to return whence it came the spirit of Doctor Eugene DuBose Bondurant, therefore be it

Resolved, By the Medical Association of the State of Alabama in convention assembled, that this organization has lost a most valuable member, who attained great distinction as a gentleman and a scholar in the spheres of medical practice, of neuropsychiatry, of mental hygiene, medical research, and of medical teaching; who was given many great honors, among which were the presidency of this body, a professorship and a deanship in the Medical Department of the University of Alabama, and a place on the National Committee for Mental Hygiene, and be it further

Resolved, That his memory be kept alive in the consciousness of the members of this Association, as an example of what is best in a Christian gentleman and a physician.

The Association stood in silent memory of Dr. Bondurant.

BY DR. LEE F. TURLINGTON

WHEREAS, Alabama is one of only twenty-one of the forty-eight states that do not now have an operating law providing for sterilization of feeble-minded persons, and

WHEREAS, It is a generally accepted and enlightened concept that "every child has a right to be born with a healthy mind and body," and

WHEREAS, The medical profession is responsible for a high degree of leadership in scientific matters of this nature, therefore be it

Resolved, That the Medical Association of the State of Alabama hereby go on record as endorsing the principle of selective sterilization as provided in the Wright Bill to be introduced in the State Legislature in its regular session this year.

The Board recommends the adoption of this resolution.

The resolution was adopted.

BY DR. TINSLEY R. HARRISON

WHEREAS, The Medical Association of the State of Alabama and the cause of medical education in Alabama have sustained grave losses in the death of Dr. Roy R. Kracke, former Dean of the Medical College of Alabama, therefore be it

Resolved, That this Association wishes to express its sense of bereavement, and desires that acknowledgement of this action be sent to his loved ones.

The Board recommends adoption of this resolution.

The Association adopted the resolution, as well as Part I of the Board's Report.

PART II

REPORT OF THE BOARD OF CENSORS AS A
BOARD OF MEDICAL EXAMINERS

In this field of its activities the Board submits the following statistical report for 1950:

Number of certificates of qualification
granted ————— 129

(a) Physicians passing examinations June 27-29, 1950	39
(1) Certificates issued	6
(2) To be issued after internships	33
(b) Certificates granted applicants completing internships July 1, 1950	30
(c) Physicians granted reciprocity	87
(d) Diplomates of the National Board of Medical Examiners licensed	6
(e) Physicians granted privilege to re-register for narcotic stamp	2
(f) Physicians denied narcotic privilege	4
(g) Chiroprody renewal licenses issued	33

CERTIFICATES OF QUALIFICATION GRANTED JUNE 1950 APPLICANTS

Blundell, George P.	Reece, John W.
Davidson, Hugh C., Jr.	Stewart, Thomas J.
Lazansky, Joseph P.	Welch, Elbert S.

CERTIFICATES TO BE ISSUED AFTER ONE YEAR OF SATISFACTORY INTERNSHIP

Agricola, Frederick T., Jr.	Perdue, Mervin W.
Alison, James F., Jr.	Pouncey, Wyatt B.
Allison, Mack E., Jr.	Romine, William O.
Bade, Craig P.	Ryle, Winfred E.
Barnett, Robert V.	Cowden, Robert W.
Blakney, Emerson W.	Dahlene, Oscar, Jr.
Bliss, Richard F.	Erwin, Claude C.
Burnett, Robert E., Jr.	Funderburg, Lonnie W.
Burnum, John Francis	Haas, Albert C.
Clayton, Jackson B.	Hoyt, Millard L.
Katz, Harry M.	Simpson, Harry M., Jr.
Kent, John E.	Sturgis, Doris Jean
Ledbetter, Edith G. J.	Thomas, James B.
Ledbetter, John R., Jr.	Vance, Scott
Maticka, Jack B.	Wilcoxson, Rhoda C.
McLaughlin, Leon D.	Wingo, Douglass H.
	Wright, William H.

CERTIFICATES GRANTED APPLICANTS COMPLETING INTERNSHIPS JULY 1, 1950

Almon, David T.	Joyce, Margaret E.
Baird, Duke B.	Kohen, Roland J.
Boggs, Lawrence K.	Lauderdale, Robert O., Jr.
Caden, John G., Jr.	Leo, Haskell D.
Caldwell, Tom O.	Miller, Elaine D.
Carraway, Charles A.	Miller, James E.
Carson, Bessie C.	Myers, Ira Lee
Douglas, George C.	Neighbors, Jacob A.
Elia, Dominic R.	Peters, Myra Ann
Fowler, Inez	Powell, F. Marvin
Gentry, James H.	Screws, Carl, Jr.
Goding, Ray F.	Smoak, Henry E., Jr.
Graham, James H.	Stansell, Evelyn L.
Haden, Hugh H., Jr.	Stephens, Albert B., Jr.
Hitchcock, Waldo P.	
Johnson, Irene W.	

RECIPROCITY APPLICANTS RECEIVED DURING THE CALENDAR YEAR 1950

Adams, Leon A.—N. C.	Mar. 22, '50
Arnold, Herbert L., Jr.—Ga.	Sept. 19, '50
Bailey, Byron G.—Neb.	Jan. 31, '50

Barnes, George S.—Miss.	July 20, '50
Blount, Dillon J.—Ark.	Feb. 27, '50
Boyer, Edward E. H.—Ohio	Aug. 10, '50
Brooke, Jefferson P.—Tenn.	June 19, '50
Brown, Alfred G., Jr.—Ga.	Mar. 21, '50
Caden, James W.—Tenn.	July 3, '50
Carrier, Everett E.—Tenn.	June 12, '50
Chapman, Jesse P., Jr.—Ga.	July 5, '50
Chetta, Nicholas A.—La.	Jan. 9, '50
Chipman, Raymond A.—Ark.	July 3, '50
Coffee, John Y., Jr.—Ga.	June 19, '50
Conditt, Abraham K., Jr.—Tenn.	June 8, '50
Cooley, Harold N.—Texas.	Nov. 6, '50
Crow, James F.—Ga.	Nov. 30, '50
Cummins, Manley L., Jr.—Ga.	Nov. 30, '50
Curry, Dodson M.—Ky.	June 12, '50
Davis, Harvey F.—S. C.	Apr. 19, '50
Davis, Josh D.—Tenn.	Jan. 12, '50
Dixon, Joseph M.—Va.	Nov. 10, '50
Erwin, James H.—S. C.	Sept. 8, '50
Ewing, John S., Jr.—La.	July 3, '50
Fair, Richard H.—Pa.	June 12, '50
Fisher, Paul L.—N. B. M. E.	July 3, '50
Follo, Marshall L.—Mich.	June 22, '50
Gessler, William F.—Ind.	Nov. 30, '50
Gibbs, James V.—Ill.	May 1, '50
Gibson, Charles F.—Md.	May 25, '50
Glaister, Joseph W.—La.	Jan. 4, '50
Grace, James T., Jr.—Ill.	July 5, '50
Grant, Charles P.—N. J.	Mar. 22, '50
Hall, Kenneth R.—Mo.	Aug. 25, '50
Hall, Wayne W.—N. J.	Aug. 10, '50
Hand, Stanley D.—Tenn.	Jan. 13, '50
Harrison, Tinsley R.—Tenn.	Dec. 22, '50
Heninger, Ben R.—La.	May 22, '50
Hennessey, Joseph A.—Tenn.	Dec. 22, '50
Henry, Blondy S.—Tenn.	July 20, '50
Hotalen, William B.—Tenn.	Mar. 10, '50
Jamison, Earle S.—Mo.	Sept. 14, '50
Johnston, George A.—Tenn.	Aug. 7, '50
Kates, Alexandria—Pa.	Jan. 6, '50
Kates, William A., Jr.—Pa.	Jan. 6, '50
Kenamer, Samuel R.—N. B. M. E.	Apr. 19, '50
Kinzer, Gilbert M.—Tenn.	Jan. 6, '50
Luckey, Carl F.—Tenn.	July 14, '50
Lyons, Champ—La.	Jan. 12, '50
Mann, Charles M.—Ill.	Dec. 28, '50
Marks, Libby R.—N. B. M. E.	July 10, '50
Martin, Harry G.—La.	July 26, '50
McCorkle, Walter W.—Tenn.	Dec. 15, '50
Moore, John R., Jr.—Tenn.	June 28, '50
Mosher, Donald M.—Ind.	Aug. 4, '50
Muldoon, Edward J.—Pa.	July 17, '50
Nelson, James D.—Ill.	May 3, '50
O'Brien, Donald J.—N. B. M. E.	Jan. 25, '50
O'Grady, Joseph A.—N. Y.	Nov. 30, '50
Owens, Louis B.—Ga.	May 22, '50
Parrish, Villard L.—Tenn.	Nov. 14, '50
Partlow, David B.—La.	June 19, '50
Pitt, Leldon P.—N. B. M. E.	July 26, '50
Pitt, Pearl S.—N. B. M. E.	Aug. 25, '50
Powell, Clifford P.—La.	Dec. 22, '50
Puckett, John P.—Tenn.	Oct. 12, '50
Raider, Louis—N. Y.	Jan. 18, '50
Reed, Thurlow W.—N. Y.	Jan. 31, '50

Reese, Howard L.—Pa.	June 19, '50
Reid, Charles L.—La.	Aug. 10, '50
Reynolds, Lawrence—Mich.	Jan. 31, '50
Reynolds, William F.—Ill.	Nov. 21, '50
Richardson, Glenn B.—Mo.	May 17, '50
Sellers, William H.—S. C.	July 5, '50
Shamblin, John L., Jr.—Mo.	May 25, '50
Sharp, Winfield K.—Ga.	Jan. 31, '50
Shepard, John L.—Ga.	Nov. 30, '50
Slaughter, Howel W.—La.	May 1, '50
Slaughter, John M.—Mo.	July 26, '50
Smith, Frederick W.—Tenn.	June 8, '50
Smith, George B.—Ga.	Apr. 19, '50
Spann, Charles L.—S. C.	June 22, '50
Sullivan, Dennis W., Jr.—La.	July 10, '50
Taylor, Elmer A.—Mo.	Oct. 12, '50
Thames, Arnold F.—Md.	July 10, '50
Thorstad, Merrill J.—Mich.	June 8, '50
Trousdale, Preston S.—Tenn.	July 10, '50
Ulm, Aaron H.—N. Y.	Nov. 30, '50
Watkins, James W., Jr.—Ga.	July 10, '50
Weisbach, Philip T., Jr.—Ill.	May 1, '50
Welden, Joseph E.—Mo.	June 12, '50
Whiteside, Virginia E.—Pa.	June 8, '50
Williams, Thomas H.—Ga.	Aug. 10, '50

CHIROPODY RENEWAL LICENSES ISSUED FOR 1951

Alexander, Isadore H.	Birmingham
AuCoin, William J.	Mobile 12
Benitez, George W.	Birmingham 3
Blotzer, Ellen L.	Mobile 10
Blotzer, John S.	Mobile 10
Carter, Harry S.	Florence
Clark, George E.	Birmingham
Coleman, Jasper C.	Dothan
Cooper, John M.	Birmingham
Crowley, Coy H.	Mobile
Crowley, Gentry B.	Huntsville
Davis, Edith M.	Birmingham 3
DeViso, Viola	Birmingham
Dixon, Mildred K.	Tuskegee Inst.
Draper, William L.	Birmingham
Edwards, Charles M.	Birmingham
LeCroy, Thomas H.	Sylacauga
Leighty, Fred G.	Birmingham 3
Lewis, Martin	Florence
Miller, John	Mobile
Oxford, Herman R. A.	Tuscaloosa
Pearson, Joe P.	Birmingham
Peterson, Bessie C.	Birmingham 3
Plevine, Erich H.	Gadsden
Rae, Hugh	Illinois
Riccio, Peter D.	Bridgeport, Conn.
Rollings, Harry H.	Montgomery 4
Sealy, Ariel L.	Selma
Sealy, Elizabeth P.	Montgomery
Silverman, Isador	Birmingham 3
White, Juddie B.	Birmingham
Wittick, Arthur, Jr.	Philadelphia, Pa.
Wright, Thomas L.	Selma

PART III

REPORT OF THE BOARD OF CENSORS AS A
STATE COMMITTEE OF PUBLIC HEALTH

D. G. Gill, M. D.

State Health Officer

PREFACE

It is a pleasure to report that once again Alabama experienced a year of low death rates, the indication being that the final general death rate will not be over 8.7. It should be remembered that the national rate has been in the vicinity of 10 for recent years. These low rates are due to the favorable experience of Alabama in so far as epidemic diseases are concerned and to generally lower rates for the chronic and degenerative diseases. Until the 1950 census figures are finally available it is not possible to get rates by race, sex and age for individual diseases. Heart disease and cancer are increasing each year, which gives emphasis to the control programs established in recent years by the Health Department and to the lay societies which devote their total existence to combating these diseases. Tuberculosis continued its remarkable decline in the number of deaths, and these figures give hope to the tuberculosis experts who predict the eventual conquest of the disease.

The virtual disappearance of malaria is hard to realize but during 1950 this was an accomplished fact. Laboratory discovery of malaria parasites has become a rarity. Other diseases, formerly life-takers, were also at low ebb. Typhoid fever, diphtheria, typhus fever and syphilis continued to fall, although control measures must continue for a long time to come. Poliomyelitis year by year is reaching high levels, possibly due to better recognition but the problem of its control has not yet been solved.

Births continued at a high level although below the recent postwar years. Both infant mortality and maternal mortality were lower than the preceding year and indicate improvement in the handling of maternity problems. Prematurity continues as the greatest single cause of infant mortality but some progress is being made.

ADMINISTRATION

HOSPITAL PLANNING

During 1950 five hospital and health center projects constructed with the aid of Hill-Burton funds were completed and began operation in Alabama. These five—Martin de Porres Hospital, Mobile; St. Vincent's Hospital, Birmingham; Macon County Hospital, Tuskegee; Dallas County Health Center, Selma; and Carraway Methodist Hospital School of Nursing, Birmingham—brought to completion a total of eight projects containing 271 general hospital beds since the beginning of the program three years previously.

The construction program was curtailed sharply by a fifty per cent cut in the Federal appropriation for the fiscal year 1950-51. Six projects with plans and specifications completed were postponed until additional Federal funds are

available. At the end of the year there were ten general hospital projects under construction, with a total of 1,179 beds; three combination general hospitals and health centers, with 140 beds; three public health centers; two mental facilities, with 116 beds; one school of nursing; one tuberculosis sanatorium, with 161 beds, and one dental clinic. On file were applications for 42 general hospitals, with a total of 1,614 beds; 16 public health centers, three tuberculosis hospitals, with 450 beds, and five schools of nursing.

The Perry County Hospital, in Marion, and the Lee County Hospital, in Opelika, were selected as the "Hospital of the Month" by a national magazine, and the Division received a "Planning Award" for the same two. The selection was based on excellence of architectural design, functional planning, economy of construction and operation, and proper provision for hospital needs of the community. One of the leading architectural magazines featured the District I Tuberculosis Sanatorium for excellence of design.

A field representative for the Hospital Licensure Program and an accountant were added to the staff. The Licensure Program, inaugurated on January 1, 1950, issued temporary licenses to 166 general hospitals and 27 nursing homes. Regulations governing the operation and maintenance of hospitals, nursing homes, maternity homes and allied facilities were adopted and approved by the State Board of Health.

During the latter part of the year much time was devoted to the planning for the part that hospitals would play in the Civil Defense Program of the State, and the first of several book-lets was published.

The Division also presented an exhibit at the annual meeting of the Southern Branch of the American Public Health Association, in Birmingham.

MENTAL HYGIENE

On January 1, 1950, services of the Division of Mental Hygiene were as follows:

- (1) Five days per week, all-purpose mental hygiene clinic, Medical College of Alabama, Birmingham.
- (2) Five half-days per week, all-purpose mental hygiene clinic, Bryce Hospital.
- (3) Publication of monthly bulletin "Alabama Mental Health," with a circulation of approximately 6,000.
- (4) Educational services, such as lectures, and distribution of mental health literature.

These services were continued throughout the year.

The Medical College Clinic examined 528 new cases, the Bryce Hospital Clinic examined 171 new cases, and 72 lectures were given by the Division staff to various groups, Medical Societies and others.

During March a 16 mm. film library of mental health pictures was established. The initial

library consisted of six pictures, which by the end of the year had grown to fourteen. These films are circulated throughout the State, on the request of any interested individual or group, free of charge except for return postage. The pictures were shown 160 times.

During March three manuals, entitled Mental Health for the Preschool Child, Mental Health for the School Child, and Mental Health for the Teen Age, were published by the Mental Hygiene Division, Jefferson County Health Department and the State Parent-Teacher Association. These were distributed to P. T. A. groups and others for study course texts. Five thousand copies of each have been distributed.

Beginning May 1, the Mental Hygiene Division gave support to the Department of Psychology, University of Alabama, by purchasing from that department psychological services for school systems, Departments of Welfare, courts and others. As a result of this arrangement, 435 new patients were examined and 23 lectures were given.

Throughout the months of June, July and August, the Mental Hygiene Division, in conjunction with the Medical College, Department of Psychology, University of Alabama, State Hospitals, and Guidance Department of the Birmingham Public Schools, conducted four training courses, of one week each, for the Vocational Rehabilitation Service and three such courses one week each for the Department of Public Welfare.

On July 5, Miss Mary Belle Roberts, psychiatric social worker, was added to the staff, bringing the total to two.

On September 15, Mr. Leon Stanley, psychiatric social worker, was added to the staff to assist with community developments throughout the State.

On October 1, Mr. William H. Knapp, clinical psychologist, was employed, bringing the total to two.

In October the broadcasting service of the University of Alabama, in cooperation with the Department of Psychology, the Department of Psychiatry, and the Mental Hygiene Division, began presentation of a radio program on mental health. Four such programs were presented.

On December 1, a project was instituted under the supervision of Dr. Henry Cheney, Lauderdale County health officer, in the Lauderdale County Health Department. This project consisted of the part-time employment of Mrs. Grady Arnett, psychiatric social worker, with the assistance of Dr. W. T. McElheny, psychologist, Florence State Teachers College, to advise the County Health Department, local school systems, courts, Welfare Department, and others regarding the management of mental health problems.

The Mental Hygiene Division continued its active participation in the Medical College psychiatric teaching program. It contributed the first-year lectures and clinical facilities for the fourth year.

MACHINE TABULATION

Acting in the capacity of a service unit, the Division of Machine Tabulation processed during 1950 work for various Bureaus and Divisions.

The Bureau of Preventable Diseases takes advantage of the services offered to a greater degree than any other Bureau. The indexing and statistical work connected with the multiphasic screening program is the largest single operation performed by this Division. The statistical tables for the morbidity and communicable diseases which appear in the annual report were processed here. Also the monthly and quarterly reports on venereal disease for the U. S. Public Health Service, State Health Department, and County Health Departments were prepared.

For the Bureau of Vital Statistics monthly indexes were prepared on currently reported birth, death and marriage certificates. Monthly, quarterly and annual statistics were also prepared on these certificates, together with the stillbirth certificates. Work was continued on the reindexing of the births reported between 1908 and 1926. The five-year period between 1908 and 1912, inclusive, was completed, and the tabulation has been turned over to the Bureau of Vital Statistics.

For the Bureau of County Health Work a summary of the Monthly Activities Report was prepared quarterly for the director of this Bureau.

For the Bureau of Sanitation statistics were prepared on the sanitary surveys made in several counties.

PUBLIC HEALTH EDUCATION

The Division of Public Health Education carried on, with some changes here and there, the same general type of health education program that has been its responsibility in past years.

During the calendar year the two Montgomery daily newspapers published 492 news and feature stories based upon releases issued by this Division. There is no information at hand as to the use made of the Department's health education material by other papers throughout the State. Indications, however, are that considerable space was devoted to it. As for a number of years, the weekly health article, State Health Chat, was distributed by the Associated Press to A. P. newspapers in the State.

Perhaps the most important change in the Division's activities that occurred during the year was the use of tape recordings and electrical transcriptions to broadcast the weekly health talks in various parts of the State. At the year's end about a dozen stations were using these, reaching a vastly larger number of hearers than could possibly be reached by a single station. The adding of new links to the broadcasting chain has been done deliberately and without haste. It is planned to continue to lengthen the chain by the addition of new stations in 1951.

As in past years, those weekly radio talks were mimeographed and widely distributed as health education material. In addition to the copies going to public health workers in this and other

states, there has been a considerable demand for them by club women, members of P. T. A. groups, educators, social workers and others wishing material on special health subjects. It has been gratifying to find that these talks are being used regularly, usually with slight changes to suit local conditions, in local health education campaigns.

The Film Library continued active. A number of new films were added, and arrangements were made for the renovation of a large number of old films that were beginning to show the results of constant use. Sixty-four of the 67 County Health Departments were members at the year's end. As in the past, film bookings were limited to them with the understanding that films could be made available by them to whatever individuals and organizations they considered responsible. Also as in the past years, the County Health Departments, and not the actual users, were held responsible for the films' safety and prompt return when promised. Film bookings totaled 570 for the year.

A number of other activities were carried on, in the main about the same as in the past. Booklets were distributed. The editing of the State Health Department's annual report and special reports was a Division responsibility. Books were reviewed for the *Journal of the Medical Association of the State of Alabama*. Information was furnished by correspondence. There was full cooperation with official and unofficial organizations interested in better health for the people of Alabama and the rest of the country.

COUNTY HEALTH WORK

Activities and accomplishments in county health work in 1950 are reflected in the following consolidated report embracing all of the State's 67 counties.

Communicable Disease Control

Admissions to service	1828
Consultations with physicians.....	1568
Field visits	7090
Smallpox immunizations	48402
Diphtheria immunizations	47136
Typhoid fever immunizations	246048
Pertussis immunizations	17368
Triple vaccine	24475

Venereal Disease Control

Admissions to service	12740
Clinic visits	30832
Field visits	11209
Number of treatments given	16361

Tuberculosis Control

Individuals admitted to service	22055
Clinic visits	29048
Field visits	49873

Maternity Service

Cases admitted to service.....	37574
Visits by antepartum cases to medical conferences	59308
Nursing visits	42278

Infant Hygiene

Individuals admitted to service	30776
Visits to medical conferences	32276
Nursing visits	55093
Neonatal death investigations	190

Preschool Hygiene

Individuals admitted to service	25192
Visits to medical conferences	32276
Nursing visits	55093

School Hygiene

Inspections by physicians and nurses	119812
Examinations by physicians	25366
Individuals admitted to nursing service	5559
Nursing visits	9949

Adult Hygiene

Medical examinations	6784
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Morbidity Service

Cases admitted to service	4972
Office and clinic visits	3936
Field visits	7267

Cancer Control

Individuals receiving diagnostic service	729
Individuals receiving treatment service	1220
Individuals admitted to nursing service	220
Field visits	686

Dental Correction Service

Individuals admitted to service	17858
Office and clinic visits	25450
Inspections by dentists and dental hygienists	15356
Prophylactic treatments given	14086

General Sanitation

Approved individual water supplies installed	724
Approved excreta disposal systems installed	9475
Field visits	86837

Protection of Food and Milk

Food-handling establishments registered for supervision	17834
Field visits to food-handling establishments	91951
Dairy farms registered for supervision	3430
Field visits to dairy farms	22748
Milk plants registered for supervision	738
Field visits to milk plants	7135

Special Control Services

Impounded water projects registered for supervision	2552
Field visits to impounded waters	4912
Premises dusted for typhus control	64298
Field visits in typhus control	47340

Laboratory

Specimens examined	509860
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PUBLIC HEALTH NURSING

The work of the Division of Public Health Nursing was interrupted by the resignation of the Secretary in June, followed by that of the Director and one of the Supervisors in July. This

left only a single Supervisor on duty until the new Director was appointed in September. A new Secretary, who, for a period worked only part-time for the Nursing Division, was appointed in October.

Although many new nurses were employed during the year, never was there a full complement of public health nurses. There were many resignations. At the end of the year 257 public health nurses were employed in official and non-official agencies in the State. This number does not include those in industry.

Eleven nurses were away on study leave for varying periods during the year; three new nurses had short orientation periods in counties other than those in which they were to be employed.

Twenty-three public health nurses attended the Seminar on Venereal Disease in Birmingham.

MERIT SYSTEM

During 1950 the Merit System for County Health Work conducted competitive examinations on an open-continuous basis for positions in the following classes: Clerk I and II, Typist I, II and III, Sanitation Officer I and II, Graduate Registered Nurse I and II, Public Health Nurse I and II, County Health Officer, I, II and III, Meat and/or Milk Inspector I and II, and Dental Hygienist. The applications received for these examinations totaled 180, of which 171 were acceptable and the applicants appeared for the examinations. From this number, 151 made a passing grade; 20 failed; and 151 names were placed on the eligible registers established as a result of the examinations. There were 88 appointments made from these registers, which included many provisional employees who received permanent status as a result of the examinations. Fifteen appointments were made from eligible lists established previously. An examination for Public Health Engineer was announced, but no register was established during the year.

In addition to appointments from eligible lists, a total of 55 positions were filled on a provisional or temporary basis. There were 103 separations from service, which included 55 resignations, 4 dismissals, 10 lay-offs, and 34 expirations of provisional and temporary appointments.

The minimum requirements for the classification of Graduate Registered Nurse II were amended to provide promotional opportunities for lower grade nurses. New classes of County Health Officer III and Dental Hygienist were adopted.

The Merit System Council approved revised salary ranges for the classes of Clerk I and II, Typist I, II and III, Graduate Registered Nurse I and II, Public Health Nurse I, II, and III, and County Health Officer I and II.

LABORATORIES

The number of specimens examined by the Bureau of Laboratories during 1950 showed a

slight increase over the number examined during 1949. During the year 535,575 specimens were examined, as compared with 529,063 for the previous year. Increases were shown in the number of specimens examined in the Anniston, Birmingham, Dothan, Huntsville and Mobile Laboratories. The specimens done in the other Laboratories showed a slight decrease for the year. Increases in types of specimens were noted in milk samples and sputum specimens for tuberculosis.

The Montgomery Laboratory continued to manufacture and distribute, free, typhoid vaccine, diphtheria toxoid, antirabic vaccine, silver nitrate ampules, Schick toxin and sterile distilled water. The volume of these products distributed, with the exception of diphtheria toxoid, was approximately the same as for 1949. A triple antigen, consisting of diphtheria toxoid, tetanus toxoid and pertussis vaccine, was purchased and made available without cost to Health Departments and physicians. The extensive use of this product resulted in a noticeable decline in the distribution of diphtheria toxoid.

Authorization to perform premarital blood tests was granted 17 private and hospital laboratories during the year. These laboratories examined 3,579 bloods of applicants for marriage.

At the request of the Medical Department of the Tennessee Valley Authority, the Laboratories examined 3,034 blood smears for malaria during the year. These smears were from T. V. A. employees in the Tennessee River Basin. The counties of Colbert, Jackson, Lauderdale, Lawrence, Limestone, Madison, Marshall and Morgan were included in the survey. All slides were found negative for malaria.

The Laboratories, at the request of the Chief Engineer of the Health Department, conducted a special bacteriologic study of the Huntsville water supply during the summer. The purpose of the study was to determine if the spring from which the water supply is obtained showed pollution along the entire transversable portion of the cavern. During the months of June, July and August, 147 samples of the water were examined. The examination consisted of plate counts and M. P. N. of coliform organisms, and differentiation of fecal and non-fecal strains of coliform was made from the highest dilutions in which coliform organisms were confirmed. Of the 147 samples examined, fecal coliform organisms were confirmed in 66.

MATERNAL AND CHILD HEALTH

During the year 1950, it is estimated that more than 95 per cent of all white deliveries in Alabama were attended by physicians. Practically 75 per cent of these were in hospitals. The white and Negro groups have not shared equally in these gains, as more than 50 per cent of the Negro deliveries were attended by midwives. In both groups, the situation has definitely improved.

During the ten-year period ending in 1948, the maternal mortality rate (per 1,000 live births) was reduced in both the United States and Alabama. This reduction was greater in the white

groups than in the Negro. The situation continues to improve, depending for further reduction upon the social and economic status of the Negro group. It is generally recognized that a further reduction in maternal mortality will be slow and tedious.

Efforts are being made through financial assistance to supply local maternity and well-baby clinics with incubators and improved clinic equipment so as to provide more scientific facilities for conducting the clinics.

In 1949 there were eighty-seven prenatal clinics held in forty counties, whereas in 1950 there were approximately 105 prenatal clinics in forty-seven counties. Every effort is being made to expand this service until every county and every community in Alabama has available adequate clinic service to provide good prenatal care.

In 1950 there were over 100 physicians devoting part-time to conducting maternity clinics for the indigent in the majority of the counties of the State.

In 1949 there were 42 well-baby clinics conducted in 24 counties, whereas, in 1950, there were approximately 46 well-baby clinics conducted in 26 counties.

Although the American Academy of Pediatrics through its State organization cooperated fully in conducting a study which was exceedingly interesting, stimulating and of great value, there still remains a very great need for pediatric service in most of the counties.

In 1950 there were 62 portable incubators in 40 counties. These were purchased through funds available from the Children's Bureau and distributed by the State Department of Health. It is planned to make available at least one incubator, on requisition from the Health Officer, to every county in Alabama.

The State Department of Health during the year provided 13 scholarships to physicians for postgraduate courses of instruction in obstetrics and pediatrics. From June 19 to June 29 three Negro physicians from Alabama attended a postgraduate course in obstetrics and pediatrics at Meharry Medical College. From July 17 to July 29 eight Alabama physicians attended the Southern Pediatric Seminar at Saluda, North Carolina, and two Alabama physicians attended the Obstetrical Week from July 31 to August 5, also at Saluda. Their comments ranged from "subjects covered, for the most part, were very well done and practical" to "wonderfully impressed by the excellent courses presented."

The State Department of Health again wishes to pay its respects to the State Medical Association's Committee on Maternal and Child Health, comprised of Drs. T. M. Boulware, A. E. Thomas, and Hughes Kennedy, Jr. This Committee's services have been most effective in stimulating interest in the organization of maternity clinics and in improving existing clinics.

Continued close cooperation with the Medical College of Alabama was maintained. Provisions

were made to purchase additional equipment in connection with the hard-of-hearing program at the Medical College for the purpose of offering short orientation courses for nurses, doctors and others, relating to this program.

A summary concerning maternal and infant mortality rates and other pertinent information will appear in the Department's annual printed report.

The State Department of Health, in cooperation with the County Health Departments, sponsored 58 dental clinics in 33 counties. Approximately 19,107 patients were admitted.

At the end of 1950, 125 local practicing dentists were participating in the dental care program. They were employed on a part-time basis and devoted 10,976 hours to this work. They completed dental care for 6,358 patients.

The U. S. Public Health Service, as in 1949, placed in Alabama a white dental crew to demonstrate in schools the topical application of sodium fluoride. This team put on demonstrations in 11 counties and treated approximately 7,000. The personnel of the team consisted of four people (a dentist, two hygienists and a clerk). All operating expenses were met with Federal funds. All reports indicate at least a 40 per cent reduction in the incidence of dental caries. The colored team assigned to Alabama in 1949 was transferred to another state in 1950.

The Director of the Division of Dental Health chose the locations and number of children to be treated. Montgomery was the base from which the team worked.

There was an increase in 1950 in the treatment activities for the dental program in Alabama but a decrease in the number of counties with dental clinics, which was due to the expectation of the dentists' being inducted into the armed forces.

NUTRITION PROGRAM

Accepting the statement that "nutrition is the single most important environmental factor affecting our health," it is the aim to integrate nutrition into all phases of the public health program.

The major nutrition services of the Bureau of Maternal and Child Health are carried on by individual and group conferences, demonstrations, talks, home visits, teaching materials and exhibits. During 1950 the Nutritionist made 51 field visits to 33 counties in various parts of the State. Specialized help was given to 128 patients attending maternity clinics, 72 parents with their children at preschool clinics, 29 families with specific food problems, 210 parents and patients at crippled children's clinics and 43 tuberculosis contacts at chest x-ray clinics. An attempt is made to present information on nutrition needs in such a way that it will be understood and so practical that it can be put to use under existing conditions.

Suggestions relative to food and sanitation were made to 77 school lunch managers and school principals in 16 counties. Visits to these

schools were made with the County Sanitation Officers and the School Lunch Supervisors, if the counties had supervisors.

There was participation in a two-weeks' conference at the University of Alabama for the 340 school lunch workers from 37 counties in the State who attended.

Consultation service, illustrated talks, and teaching materials were provided for nurses, midwives and teachers in the elementary grades. Nutrition services were also offered social case workers and welfare families with the purpose of obtaining the best food for the least money.

The type of service rendered centers around the nutrition needs as recognized by the County Health Officer. It is encouraging that more Health Officers are beginning to realize that nutrition is of paramount importance.

MACON COUNTY MEDICAL CARE PROGRAM

The Macon County Medical Care Program has been amended so that maternity patients eligible for admission to the John A. Andrew Memorial Hospital at Tuskegee must be (a) medically indigent and (b) have some physical condition or a history of previous abnormalities making hospital delivery advisable. This program provides care for Negro maternity cases and sick infants in Macon County and in six nearby counties. The amendment placing restrictions on admission of cases in the Macon County area affords an opportunity for the same type of patients to be admitted from other counties in the State.

Requirements for admission in addition to (a) and (b) are that referral of patients shall be made to the hospital staff by the County Health Officer and/or attending physician. In the latter case, the physician shall notify the Health Officer as soon as possible.

Records indicate that there were 773 deliveries in 1950, with 739 live births and 40 stillbirths. Forty-five of these deliveries were by cesarean section. The maternal death rate was 11.79 per 1,000 live births, while the stillbirth rate was 52.24 per 1,000 total births, and the neonatal death rate 22.27 per 1,000 live births. There were 66 premature babies (5½ lbs. or less). Sixteen mothers, or 2.38 per cent, had puerperal infection.

Funds for this program were provided by a special grant from the U. S. Children's Bureau.

PREVENTABLE DISEASES

The communicable disease front remained relatively quiet. The measles epidemic of the past year had receded, and that disease fell back to its normal incidence pattern. Only 1,654 cases were reported for the entire period.

Poliomyelitis continued its fifth column activities until 281 cases were reported. Although there was no epidemic concentration, still the number was in excess of 1949 when 243 cases were reported.

There was a continued lessening of the diphtheria onslaught, with only 317 individuals involved. Although 1950's decline from the previ-

ous year, when 358 cases occurred, was not as marked as 1949's, still the drop showed the effect of continuing efforts against that disease. Typhoid and paratyphoid fever remained about the same, with 56 cases of typhoid and 12 of paratyphoid. There are still too many cases of diphtheria and typhoid fever, and hope for the future depends on continuing a constant barrage against these two diseases.

There were 4,474 cases of cancer reported, of which 1,826 were treated in the State Tumor Clinics. Limited funds still keep certain types of cancer from eligibility for free clinic services.

The multiple screening program was carried to 23 counties and 363,972 individuals were x-rayed. However, only 343,054 were blood tested. The popularity of the x-ray over the needle is reflected in these numbers.

Of the 363,972 individuals x-rayed, 1,433 showed definite evidence of pulmonary tuberculosis, while 427 were classified as tuberculosis suspects and 1,338 showed signs of other chest pathology.

Reading all survey x-ray films for heart disease revealed 1,863 definite cases of heart disease and 640 persons as heart disease suspects. A breakdown of the definite cases showed 717 caused by hypertension, 572 by arteriosclerosis, 343 by rheumatic heart disease, and 211 by other etiologic factors.

Of the 343,054 individuals blood tested, 4,931 were found infected with syphilis and 787 were suspected of this disease because diagnostic proof was incomplete.

A blood sugar determination was made on each blood drawn in the survey. Follow-ups by private practitioners revealed 1,588 individuals with diabetes mellitus. This figure represents the completed diagnostic studies on about fifty per cent of the referred suspects.

In October all survey activities were curtailed because of a reduction in Federal funds.

SANITATION

During 1950 there were approved by County Sanitation Officers and reported to the Bureau of Sanitation 2,179 pit privies, 7,092 septic tanks and 8,870 sewer connections, or a total of 18,141 new units of sanitation. They serve 93,550 people of the State. A total of 981 sanitation units, serving a population of 10,371, were restored to former usefulness and protection to the public health. It is thus seen that 103,921 people were benefited by the 19,122 new or restored installations.

In comparison with work done in the previous year, it is noted that 2,339 more units were constructed or restored, representing an increase of approximately 15 per cent. The County Sanitation Officers should derive great satisfaction from their accomplishments. They should, however, redouble their efforts in the field of strictly rural sanitation.

MALARIA CONTROL

The three engineers assigned to the Malaria Control Division are responsible for the enforce-

ment of the State's Impounded Water Regulations and the planning, promotion and direction of a statewide program for controlling the breeding of the malaria-transmitting mosquito (*Anopheles quadrimaculatus*), pest mosquitoes, flies and other household pests. This includes programs connected with:

1. Impounded water:
 - a. Major impounded water projects.
 - b. Minor impounded water projects.
2. State Health Department and U. S. Public Health Service Cooperative Program.
3. Miscellaneous malaria and insect control operations.

Major impounded water projects are those having surface areas greater than 100 acres; and minor impounded water projects are those having less than 100 acres in surface area.

There are 26 major impoundages in the State, ranging in surface area from 400 to 63,000 acres. Speigner lake is the smallest and Wheeler reservoir the largest. The major impoundages in the State represent a total flooded area of 261,398 acres, with a population of 109,750 residing within the flight range of the malaria-transmitting mosquito. The owning agencies of these reservoirs are required under State Regulations to prepare and maintain them so that mosquito breeding will be kept at a minimum. Weekly reports of mosquito control activities are sent to the Malaria Division by the owners. These reports are checked and posted. Visits are made to the reservoirs, operations are checked, and recommendations on improvements are made. Thirty-two visits were made to these lakes in 1950. Reports were prepared where indicated, outlining recommended improvements on mosquito control operations. Three preimpoundment inspections were made of two other major impoundages in the State now under construction. These are Big Creek Reservoir, in Mobile, and Jim Woodruff, in Houston County.

There are 4,339 minor impounded water projects under Health Department supervision. An estimated 2,500 more in the State are subject to the Regulations. The 4,339 minor impoundages under Health Department supervision have a total surface area of 14,128 acres, with a total population of 521,727 residing within flight range of the malaria-transmitting mosquito. Of these, 1,006 have been placed under supervision during the year. State engineers and county sanitation officer personnel made a total of 3,376 inspections of the minor impoundages.

There were 71,152 houses treated in the State with a 5 per cent DDT spray. This program was financed by the U. S. Public Health Service and participating counties. The former allocated \$203,725 to the State for carrying out this program. The counties and cities participating spent an estimated \$50,000. This made a total expenditure of \$253,725 in the State on this program. There were employed on the program 13 full-time and 126 seasonal pieces of personnel, exclu-

sive of the ones employed by the counties and cities. These employees received direct supervision from the engineers assigned to the Malaria Division.

Supervision was given to the operation of a drainage program in east Colbert County. There were 24,815 linear feet of drainage ditches completed, and 46,256 cubic yards of dirt were moved at a cost to the county of about \$14,000.

A number of towns in the State carried out pest mosquito and fly control programs. Cost estimates and plans of operations of these programs were made by the engineers of the Malaria Division. Programs of this type have heretofore been given secondary consideration by the Malaria Division but are rapidly gaining in popularity on account of the availability of new insecticides. This has resulted in increasing demands upon the personnel of the Division to provide consulting services for municipal pest control projects.

INSPECTION ACTIVITIES

At the end of the year 39 counties had full-time sanitation officers or veterinarians devoting part-time to dairy, food and meat inspection; 19 had one or more men assigned to full-time inspection work; four had sanitation officers serving two counties each; and five had no inspection service whatever.

Food sanitation ratings were made in 24 counties, as compared with 30 in 1949. The numerical average of these was 89.03, which is slightly above the 1949 average of 87.6. Even though the average rating figures indicate only a very small degree of improvement, there are nevertheless substantial improvements being made continuously with regard to physical structures, equipment and methods of operation.

One food-borne epidemic involving at least 100 persons was reported during the year. However, it is felt that others occurred but without epidemiologic data to substantiate them.

Twelve milk sanitation ratings were made. In six of the ratings both retail raw and pasteurized milk were involved, whereas in the remaining six only pasteurized milk and milk products were offered for sale. The weighted average of the retail raw milk was 84.98 as compared with 85.2 in 1949, while that for pasteurized milk was 86.64, as compared with 87.7 for 1949. But for a single county, with a rating of 67.05, the rating for pasteurized milk would be 88.42. There is a gradual increase in the demand for pasteurized milk and milk products throughout the State. In the interest of helping to promote and develop satisfactory milk supplies, advisory assistance was rendered in 61 of the 67 counties of the State.

There are 104 pasteurization plants and more than 1,700 dairy farms under supervision of the various County Health Departments. These sold approximately 100,000 gallons of milk per day to the consuming public. Ninety-five per cent or more of this milk is pasteurized. Pasteurized milk is now available in every county of the State.

There is evidence of an increasing desire by the dairy and milk plant operators of the State to continue to improve the quality and safety of the milk and milk products offered for sale.

The water supplies of all oyster shucking and crabmeat picking plants were checked for purity. Also the routine supervision of all such establishments was conducted in the usual manner.

Services to the County Health Departments with regard to the various inspection activities were very limited because of a shortage of personnel and the nature of assignments for the rendering of such.

More than 9,000 inspections of all kinds were made during the year.

PUBLIC WATER SUPPLIES

As of December 31, 1950, there were 268 public water supply plants engaged in the production of water and 40 dependent systems. This represents an increase of six new plants and four dependent supplies over the corresponding date in 1949. According to a survey completed during the year, approximately 2,000,000 persons were served with water from public supplies.

The major activities of the Water Supply Division of the Bureau of Sanitation are general supervision of public water supplies and waterworks construction.

Each public water supply in the State was visited at least once during the year. In all, 343 such visits were made. These inspections covered the general condition of the waterworks system, operating procedure, and bacteriologic as well as chemical quality of the water. Personnel engaged in the waterworks field were instructed in proper operating procedure and responsible officials given advice concerning water works problems. As a further control of water quality, the water supplies submitted 17,615 samples of water to the State Laboratories for bacteriologic analysis. The reports of these analyses were interpreted by the Water Supply Division.

Construction of waterworks facilities leveled off somewhat during the year in monetary value, although 46 projects were completed at an estimated cost of \$3,519,000, and 24, involving a cost of \$5,004,000, were under construction at the end of the year.

Plans and specifications were reviewed and permits issued to 50 supplies for the construction of either new sources of water or modifications, alterations and additions to existing systems. The proposed work represented an estimated cost of \$3,202,700.

In addition to reviewing plans and specifications, engineers of the Department consulted frequently with practicing engineers engaged in the design of waterworks facilities. The fifth annual meeting of the Alabama Water and Sewage Association was held in June at Auburn and was attended by 130 members. This organization of water and sewage men is sponsored by the State Health Department, the University of

Alabama, and the Alabama Polytechnic Institute. The Bureau of Sanitation has taken a leading part at the meetings and has assumed the responsibility of organizing and editing the Association's *Official Bulletin*, which is published at quarterly intervals.

Engineers assigned to the supervision of public water supplies cooperated closely with the U. S. Public Health Service in certifying supplies for use by interstate carriers. They also participated in training schools for new sanitation officers and assisted in organizing the annual meeting of the Alabama Water and Sewage Association.

TYPHUS CONTROL

According to records obtained from the Bureau of Preventable Diseases, the number of reported typhus fever cases in Alabama in 1950 was 130, including one that resulted in death.

The activities of the Division of Typhus Control included advisory and supervisory service in rat proofing, rat stoppage, rat extermination surveys, rat extermination campaigns, sanitation officer training schools, DDT dusting programs, educational campaigns, veterans' training programs, commercial exterminator activities and the collection of entomologic data. These activities were conducted by Federal, State, county and city personnel, with the necessary material furnished by the agencies concerned.

Of the eleven pre-approved counties—Baldwin, Barbour, Butler, Coffee, Covington, Dale, Escambia, Geneva, Houston, Pike and Talladega—only one county—Butler—did not participate in a program. In addition to the above counties, programs were also conducted in Calhoun, Conecuh, Crenshaw, Dallas, Henry, Marengo, Mobile and Montgomery.

Tabulated reports show the following: 134,348 premises inspected, 113,940 premises treated, 304,754 pounds of DDT applied, 50,215 pounds of rodine poison bait used, 31,855 pints of arsenic water released and 13,739 pounds of hydrocyanic acid gas used for gassing rat harborage. A total of 5,298 man-hours of supervision and labor was furnished by the U. S. Public Health Service. An additional total of 67,269 man-hours of supervision and labor was furnished by the State, county and cities participating.

Extermination programs, urban and rural, were conducted in 36 counties including 128 municipal programs. Many of these programs are conducted twice each year and are becoming an accepted procedure as a rodent and typhus control measure.

During the week of November 27, 1950, personnel from the Division of Typhus Control gave assistance to the U. S. Public Health Service Virus Laboratory investigating an outbreak of illness in Geneva County. It was suspected that probably leptospirosis or brucellosis might be implicated. In connection with the investigation, 45 live rats were trapped in the affected area for laboratory analysis.

Approximately 4,000 rural homes were treated

in nine counties in cooperation with the Veterans' on the Farm Program and County Farm Program. Classroom lectures, instructions and demonstrations were conducted on the control of typhus fever and the preparation and distribution of rodine poison bait. It is believed that additional requests will be made for continued participation in these programs and that it will not only serve as a good preventive measure with regard to typhus fever but also establish an excellent foundation for future control methods by the individual.

Entomologic studies have been conducted since January, 1946 in selected areas of the State in an effort to obtain definite conclusive information that will be of value in formulating future control measures. Tabulated reports for 1950 show the following: 1,052 premises trapped, setting 15,666 traps; 1,820 rats caught; 1,747 rats bled, of which 196 bloods were positive for murine typhus fever; 1,802 rats combed for ectoparasites, from which 11,241 fleas, 8,040 mites and 6,641 lice were identified. It is evident that rat flea control may be obtained through the use of DDT powder and that corresponding reduction of the disease in the rat as well as in the human being may be expected.

VITAL STATISTICS

One of the lowest death rates in the State's history and a continued high birth rate feature the vital statistics for 1950, but these rates were slightly lower than those for 1949. The number of marriages increased sharply during the latter months of 1950 to produce a total greater than that for any year since 1947.

Last year the Bureau of Vital Statistics received more than 141,000 pieces of mail relating to vital records and statistics. A total of \$31,354 in statutory fees was received. This sum represents 62,708 certified records, not including 11,062 issued on request of the Veterans Administration. In addition to the certified copies issued, 35,360 requests were handled for Social Security, welfare, family allotments, personnel recruiting and other purposes. The records service demand greatly increased during the latter part of the year. The over-all volume was greater during 1950 than for any other year since 1945.

A total of 132,560 original records was filed in the central Bureau of Vital Statistics. In addition, 8,741 transcripts of divorce decrees and 45,492 reports of premarital physical examinations and blood tests were recorded. Certificates were prepared and filed for 783 adoptions, 390 legitimations and 12,052 delayed records of birth.

The Records Division processed 8,316 correction affidavits last year. About one-ninth of all records from which certified copies were made had to be corrected first. Queries numbering 3,350 were mailed to obtain information needed to correct obvious errors and omissions in current death records. Of these, satisfactory replies were received to 2,780 queries, thereby enabling the Nosologists to better classify the causes of death. Special queries were made on 834 deaths caused

by accidents. This supplementary information is compiled as a contribution to educational programs in accident prevention. The smaller number of death certificate queries and the decreased number of reports falling in the ill-defined and unknown category of mortality statistics give evidence of improved cause-of-death reporting and responsiveness of physicians. General improvement in mortality statistics has been attained through the revised code for causes of death.

Sustained efforts are being made to strengthen and improve registration throughout the State. The special test in completeness of birth registration will soon be completed. When the results are known, field work will be concentrated in those areas which have the highest incidence of unregistered births. Several hospitals do not make monthly reports of births and deaths. This lack of a check on registration handicaps field work and other processes which are employed to reduce registration delinquencies. Progress in this direction has been realized during 1950. As hospital clerical personnel and records systems are improved, the vital statistics activity will no doubt benefit from better reporting. One source of unregistered births and deaths is a continuing source of embarrassment. That is, the practice by a few of our physicians of refusing to file a certificate until the medical fee has been paid. There is no legal or ethical justification for such punitive conduct. Aside from the small number of exceptionable delinquencies noted, local participation in vital statistics registration is good.

MID-CENTURY TRENDS IN VITAL STATISTICS

Deaths

The general mortality experience in 1950 changed very little from that of the immediately preceding years. There were 26,480 deaths recorded in 1950, with a rate of 8.6 per 1,000 population, as compared with 8.7 in 1949 and a five-year average (1945-1949) rate of 8.6. It appears that the final rate for 1950 will be the same as that for the previous year. When results of the 1950 census enumeration are known, age-specific calculations by cause of death, sex and color can be made with accuracy. These calculations will produce data which can be compared with those of a decade ago. It will then become possible to measure any progress made in combating certain diseases. We can adjust mortality rates for factors of age and race changes in the population in relation to the prevalence of certain diseases and causes of death.

Infant Deaths

There were 2,982 deaths of infants under one year of age, including 2,020 who died during the first month after birth. The infant death rate of 36.7 per 1,000 live births is well below the 1949 rate and the average for the 1945-1949 period.

The neonatal rate of 24.9 shows encouraging progress in preventing deaths during the first few days after birth. No doubt the improvement in prenatal care and special care of immature babies is a contributing factor. However, immaturity at birth continues to rank among the ten chief causes of death.

The number of whooping cough deaths more than doubled the number recorded in 1949. Gastro-intestinal diseases took the lives of 148 children under two years old last year, a decrease by nearly one-third from the 226 such deaths recorded in 1949.

Stillbirths

The ratio of stillbirths to all births decreased slightly last year and is 9 per cent less than the previous five-year average of 29 stillbirths per 1,000 total deliveries. There is considerable evidence of incomplete reporting of stillbirths. This is particularly true of stillbirths occurring without a medical attendant and also frequently occurs in the smaller hospitals and clinics, especially in cases where the fetus is disposed of locally.

Maternal Deaths

Diseases of pregnancy and childbirth caused 149 deaths, at a rate of 17.9 per 10,000 total deliveries. This is a slight decrease from the 1949 figures and is the lowest in Alabama's vital statistics history. As in the case of infant deaths and stillbirths, availability and improvement of prenatal care and medical facilities have saved the lives of many.

Principal Causes of Death

The ten chief causes of mortality in 1950 accounted for 74.9 per cent of all deaths in the State. Diseases of the heart as a major cause of death continues in top place, with the highest mortality rate on record. Cerebral hemorrhage (intracranial lesions of vascular origin) and malignant neoplasms (cancer) ranked second and third, respectively, to take their established places in the list of killers. When results of the 1950 census of population are available, it will be of major interest to ascertain the age-specific mortality rates for the so-called degenerative diseases. Accident fatalities increased in number more than 14 per cent over the 1949 figure to reach a rate higher than the average for the previous five-year period. Automotive accidents contributed heavily to the total of fatalities. The 1950 pneumonia death rate (34.3) increased from that of 31.4 for 1949, which was the lowest on record for the cause. Due to modern effective treating methods, mortalities due to pneumonia and bronchitis have been greatly reduced during the past several years. The substantial reduction in the tuberculosis death rate deserves attention. Within the past ten years the tuberculosis death rate has been reduced to slightly more than one-half the 1940 rate of 53.1.

The Ten Major Causes of Death, 1950,
With Rates Per 100,000 Population

	1950		1949		Average	
	(Provisional) Number	Rate	(Final) Number	Rate	(1945-1949) Number	Rate
Diseases of the heart*** (1)	7,919	258.8	7,750	255.1	6,137	205.0
Vascular lesions of central nervous system	3,069	100.3	2,935	96.6	2,609	87.1
Malignant neoplasms	2,860	93.5	2,809	92.5	2,560	85.5
Accidental deaths	1,911	62.5	1,670	55.0	1,848	61.7
Pneumonia, all forms	1,049	34.3	957	31.4	1,145	38.2
Tuberculosis	819	26.8	908	29.9	1,063	35.5
Nephritis and nephrosis***	738	24.1	771	25.4	1,752	58.5
Immaturity*** (2)	718	8.8	757	9.0	946	11.7
Homicide	432	14.1	425	14.0	426	14.2
Diseases of the arteries	326	10.6	347	11.4	287	9.6

***Not comparable prior to 1949 due to revision of code.
(1) Hypertension with mention of heart included in heart disease totals.
(2) Rate per 1,000 live births.

Communicable Diseases

Whooping cough mortalities increased sharply in 1950 to more than double the rate (0.8) for 1949. The general trend is down, although the annual rate of deaths from this cause fluctuates rather widely. Mortalities attributed to influ-

enza increased in 1950 but remained well below the five-year average. The syphilis mortality rate dropped to a new low and continued a downward trend extending over several years. Malaria and measles caused fewer deaths last year. Diphtheria, meningitis, and poliomyelitis took a greater toll of lives than they did in 1949.

Deaths From Certain Communicable Diseases,
1950, With Rates Per 100,000 Population

	1950		1949		Average	
	(Provisional) Number	Rate	(Final) Number	Rate	(1945-1949) Number	Rate
Syphilis	169	5.5	207	6.8	303	10.1
Influenza	258	8.4	211	6.9	319	10.6
Whooping cough	51	1.7	23	0.8	65	2.2
Diphtheria	25	0.8	21	0.7	35	1.2
Meningitis	26	0.8	17	0.6	33	1.1
Poliomyelitis	22	0.7	14	0.5	16	0.5
Malaria	13	0.4	18	0.6	23	0.8
Measles	10	0.3	53	1.7	29	1.0
Typhoid and paratyphoid fever	4	0.1	1	***	8	0.3
Encephalitis	5	0.2	1	***	9	0.3

Births

The birth rate dropped in 1950 for the third consecutive year. A total of 81,159 births was recorded, as compared with 84,301 in 1949 and 87,242 in 1947 when the highest rate (28.8) was established. Favorable economic conditions and unsettled international relations have no doubt stimulated a continuing period of high birth rates.

Marriages and Divorces

Returns on marriages and divorces are not complete, although the preliminary figures indicate an increase over the past two years. Current tabulations show that 22,746 marriages and 8,741 divorces have been recorded in Alabama during 1950. Many Alabama couples marry in Mississippi, presumably to avoid our antenuptial blood test.

REVISION OF THE ROLLS

The next order of business being the revision of the Rolls of the Association, the Secretary was directed by President Weldon to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; and, third, dues are to be remitted for each member not exempt from payment of dues."

With this foreword, the revision proceeded.

1. *Revision of the Roll of County Societies:*

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Chilton, Choctaw, Clay, Cleburne, Coffee, Colbert, Conecuh, Covington, Cullman, Dale, DeKalb, Elmore, Escambia, Etowah, Hale, Henry, Houston, Jackson, Jefferson, Lauderdale, Lawrence, Lee, Lowndes, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Pike, Randolph, Shelby, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Wilcox, Winston—Total 47.

(b) County societies partially delinquent: In that they are not represented by delegates at this meeting of the Association: Barbour, Cherokee, Coosa, Crenshaw, Dallas, Fayette, Franklin, Geneva, Greene, Lamar, Limestone, Macon, Marengo, Perry, Pickens, St. Clair. In that report and dues have not been received: Clarke, Madison—Total 18.

(c) County societies totally delinquent: Russell, Washington—Total 2.

No objection being made as to the correctness of this report, the President directed the Secretary to write the Societies delinquent in reports and dues and, failing to remove the delinquencies, to call the Societies to the attention of the State Board of Censors.

Whereupon the roll of County Medical Societies was declared closed until the next annual session of the Association.

The Secretary then said:

"In revising the Roll of Counsellors, five lists are prepared, designated respectively: (1) the schedule of counsellors clear on the books; (2) the schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) the schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the state, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing; and (5) the schedule of counsellors-elect who have qualified as provided in the Constitution."

With such preface, the revision of the rolls was continued.

2. *Revision of the Roll of Counsellors:*

(a) Counsellors clear on the books: Abbott, Acker, Alison, Allgood, Anderson, Barber, Barnes, Baumhauer, Bell, Belue, Boyd, Bragg, Branch, Brown, Brunson, Carraway, Carter, Chenault, Cloud, Clyde, Cocke, Collier, Conwell, Craddock, Darby, Daves, Davis, Denison, Dodson, Donald, D. C., and J. M., Eskew, Finney, Ford, Foshee, Garber, Gibson, Gill, Gipson, Givhan, Gladney,

Godard, Golden, Gresham, Grote, Harper, Hill, R. C., Hill, R. Lee, Hodges, Isbell, Jackson, Jones, C. T., Jones, J. Paul, Kennedy, Killingsworth, Leatherwood, Lisenby, Littlejohn, Martin, Mazzyck, McCown, McNease, Meadows, Moore, C. W. C., Morgan, J. O., Morgan, J. Ralph, Neal, Owings, Parker, L. D., Parker, Robert, Partlow, Perdue, Riggs, Riser, Roan, Robinson, Salter, P. P., Salter, W. M., Samford, Segrest, Sewell, Sherrill, Simpson, H. M., Simpson, John W., Skinner, Smith, Stabler, Stallworth, Thacker, Underwood, Waters, Watson, Weldon, Whiteside, Wilson, Woodruff.

In the absence of objection, the President ordered passed the names of these Counsellors reported as clear on the books.

(b) Delinquent Counsellors: None.

(c) Miscellaneous Counsellors:

(1) Life Counsellors who have died: Drs. E. D. Bondurant and P. V. Speir.

(2) Active Counsellors who have died: Dr. J. S. Tillman.

(3) Active Counsellors who have moved: None.

(4) Active Counsellors considered as having resigned: Dr. M. S. White.

(d) Active Counsellors of twenty years standing: None.

(e) Counsellors-Elect who have properly qualified: Drs. J. M. Crawford and A. F. Wilkerson.

The President directed that the names of the deceased Counsellors be transferred to the Book of the Dead; that the name of Dr. M. S. White be removed from the Roll of Active Counsellors; and that to that Roll there be added Drs. J. M. Crawford and A. F. Wilkerson.

3. *Revision of the Roll of Correspondents:*

Dr. Emil Novak, the 1951 Jerome Cochran Lecturer, was added to the Roll of Correspondents.

4. *Revision of the Roll of Officers:*

Dr. T. Brannon Hubbard, Montgomery, was elected President; Dr. B. W. McNease, Fayette, President-Elect; Dr. S. W. Windham, Dothan, Vice-President of the Southeastern Division; Drs. John W. Simpson, Birmingham, and J. Paul Jones, Camden, Censors for five years; and Dr. Robert Parker, Montgomery, Censor for one year to complete the unexpired term of Dr. T. Brannon Hubbard.

Committees constitutionally provided to nominate Counsellors brought in the following nominations, and the nominees were elected by the Association: 1st. District—Dr. W. A. Stallworth; 2nd.—Drs. John L. Branch, E. F. Leatherwood and L. V. Stabler; 3rd.—Dr. H. S. Holloway; 4th.—Dr. C. W. C. Moore; 5th.—Drs. R. A. Foshee and A. C. Gipson; 6th.—Drs. C. T. Acker and W. C. Golden; 7th.—Drs. E. T. Brown, R. B. Dodson

and M. C. Hollis; 8th.—Drs. J. O. Belue and C. A. Grote; 9th.—Drs. H. W. Allgood and D. C. Donald.

Miscellaneous Business

EXPRESSION OF THANKS

On motion by Dr. Cannon, and by a rising vote of thanks, the gratitude of the Association was expressed to the Mobile County Medical Society for its hospitality, which was in evidence throughout the session; and to all individuals and agencies that had contributed so greatly to the success of the meeting.

MEETING OF 1952

Invitation was accepted to meet in Montgomery, April 17, 18 and 19.

INSTALLATION OF OFFICERS

The newly-elected officers were called to the platform, and each, in his turn, expressed appreciation of the honor that had been conferred by the Association; whereupon President Hubbard declared the Association adjourned.

THE ROLL OF COUNSELLORS

REVISION OF 1951

LIFE COUNSELLORS

Name and Address	Date of Election
Acker, Paul Jerome Morris, Mobile (1)	1923
Alison, Samuel Beekman, Minter (4)	1919
Ashcraft, Virgil Lee, Reform (7)	1919
Bedsole, James G., Jackson (1)	1922
Burdeshaw, Shelby L., Headland (3)	1921
Caldwell, Edwin Valdivia, Huntsville (8)	1918
Cannon, Douglas L., Montgomery (2)	1928
Chenault, Frank L., Decatur (8)	1917
Dabney, Marye Y., Birmingham (9)	1923
Granger, Frank G., Ashford (3)	1928
Gresham, George L., Speigner (4)	1913
Guice, Charles Lee, Gadsden (5)	1899
Harris, Seale, Birmingham (9)	1903
Harrison, William Groce, Birmingham (9)	1896
Hayes, Charles Philips, Elba (3)	1920
Hayes, Julius Pope, Clanton (6)	1920
Heacock, Jos. D., Birmingham (9)	1912
Heflin, Wyatt, Birmingham (9)	1893
Hill, Robert L., Winfield (7)	1924
Hill, Robert Somerville, Montgomery (2)	1898
Howell, William Edward, Haleyville (7)	1918
Howle, James Augustus, Hartselle (8)	1895
Hubbard, T. Brannon, Montgomery (2)	1924
Jackson, Alva A., Florence (8)	1918
Leach, Sydney, Tuscaloosa (6)	1920
Lester, Belford S., Birmingham (9)	1923
Lightfoot, Phillip Malcolm, Shorter (3)	1918
Lull, Cabot, Birmingham (9)	1919
Martin, James Cordie, Cullman (7)	1917
Mason, James Monroe, Birmingham (9)	1918
McAdory, Edward Dudley, Cullman (7)	1920
McCain, William Jasper, Livingston (6)	1898
McCall, Daniel T., Mobile (1)	1923
McLeod, John Calvin, Bay Minette (2)	1911
McLester, James Somerville, Birmingham (9)	1913
Oswalt, G. G., Mobile (1)	1929
Partlow, William Dempsey, Tuscaloosa (6)	1909

Ralls, Arthur W., Gadsden (5)	1919
Rucker, Edmon W., Birmingham (9)	1922
Sankey, Howard J., Birmingham (9)	1914
Scott, Walter F., Birmingham (9)	1922
Searcy, Harvey Brown, Tuscaloosa (6)	1923
Sledge, Edward S., Mobile (1)	1922
Taylor, Woodie R., Town Creek (8)	1928
Thigpen, Charles Alston, Montgomery (2)	1900
Thomas, Eugene Marvin, Prattville (4)	1920
Walker, Alfred A., Birmingham (9)	1923
Walls, J. J., Alexander City (5)	1924
Wilkinson, David Leonidas, Birmingham (9)	1902
Total 49	

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.

Those marked with an asterisk (*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

	Date of Elec- Expi- tion ration
Abbott, Chas. E., Tuscaloosa (6)	*1945 to 1952
Acker, Charles T., Montevallo (6)	†1951 to 1957
Alison, James F., Selma (4)	†1948 to 1954
Allgood, Homer W., Fairfield (9)	*1951 to 1958
Anderson, Thos. J., Greensboro (8)	†1947 to 1953
Barber, William J., Butler (1)	*1949 to 1956
Barnes, J. Mac Ilwaine, Montgomery (2)	1949 to 1956
Baumhauer, Jacques H., Mobile (1)	1949 to 1956
Bell, J. Mac, Mobile (1)	*1950 to 1957
Belue, Julius O., Athens (8)	†1951 to 1957
Boyd, Frank H., Opelika (3)	*1946 to 1953
Bragg, John C., Decatur (8)	*1948 to 1955
Branch, John L., Montgomery (2)	*1951 to 1958
Brown, Elridge T., Cleveland (7)	†1951 to 1957
Brunson, Emmett T., Samson (3)	†1950 to 1956
Carraway, Chas. Newton, Birmingham (9)	*1949 to 1956
Carter, William R., Repton (2)	†1948 to 1954
Chenault, Erskine M., Decatur (8)	†1949 to 1955
Cloud, Robert E., Ensley (9)	*1948 to 1955
Clyde, Wallace A., Birmingham (9)	1947 to 1954
Cocke, William T., Demopolis (1)	*1946 to 1953
Collier, James P., Tuscaloosa (6)	*1947 to 1954
Conwell, H. Earle, Birmingham (9)	*1949 to 1956
Craddock, French H., Sylacauga (4)	†1946 to 1952
Crawford, Jas. M., Arab (5)	1950 to 1957
Darby, Henry A., Athens (8)	1947 to 1954
Daves, James G., Cullman (7)	*1945 to 1952
Davis, Lewis C., Gordo (7)	*1946 to 1953
Denison, George A., Birmingham (9)	*1950 to 1957
Dodson, Robert B., Cullman (7)	*1951 to 1958
Donald, Dan C., Birmingham (9)	*1951 to 1958
Donald, Joseph M., Birmingham (9)	1946 to 1953
Eskew, M. H., Uniontown (6)	†1948 to 1954
Finney, James O., Gadsden (5)	1947 to 1954
Ford, Charles E., Roanoke (5)	*1946 to 1953
Foshee, Reuben A., Alexander City, Rt. 4 (5)	*1951 to 1958
Garber, James R., Birmingham (9)	†1946 to 1952
Gibson, Edward Lee, Enterprise (3)	*1947 to 1954
Gill, Daniel G., Montgomery (2)	1947 to 1954
Gipson, Amos C., Gadsden (5)	*1951 to 1958
Givhan, Edgar G., Jr., Birmingham (9)	1946 to 1953
Gladney, James C., Jasper (7)	1949 to 1956
Godard, Claud G., Fairhope (2)	*1949 to 1956
Golden, William C., Clanton (6)	*1951 to 1958
Gresham, Walter A., Russellville (7)	†1947 to 1953
Grote, Carl A., Huntsville (8)	†1951 to 1957
Harper, William F., Selma (4)	1948 to 1955
Hill, Robert C., York (6)	†1950 to 1956
Hill, R. Lee, Haleyville (7)	*1946 to 1953

Hodges, Rayford, Scottsboro (8)	†1949 to 1955
Isbell, Arthur L., Albertville (5)	*1947 to 1954
Jackson, Albert C., Jasper (7)	*1947 to 1954
Jones, Carl T., Newville (3)	*1948 to 1955
Jones, J. Paul, Camden (1)	*1950 to 1957
Kennedy, Hughes, Jr., Birmingham (9)	*1950 to 1957
Killingsworth, Noah W., Brundidge (2)	*1946 to 1953
Leatherwood, Elbert F., Hayneville (2)	*1951 to 1958
Lisenby, J. Otis, Atmore (2)	*1950 to 1957
Littlejohn, Wilmot S., Birmingham (9)	1948 to 1955
Martin, John A., Montgomery (2)	†1947 to 1953
Mazyck, Arthur, Dothan (3)	1948 to 1955
McCown, William G., Huntsville (8)	1947 to 1954
McNease, Benjamin W., Fayette (7)	1947 to 1954
Meadows, James A., Birmingham (9)	*1950 to 1957
Moore, C. W. C., Talladega (4)	†1951 to 1957
Morgan, J. Orville, Gadsden (5)	*1946 to 1953
Morgan, J. Ralph, Birmingham (9)	*1950 to 1957
Neal, Ralph D., Grove Hill (1)	1948 to 1955
Owings, W. J. B., Brent (6)	*1948 to 1955
Parker, Lorenzo D., Andalusia (2)	†1947 to 1953
Parker, Robert, Montgomery (2)	1948 to 1955
Partlow, Rufus C., Tuscaloosa (6)	*1950 to 1957
Perdue, James D., Mobile (1)	†1947 to 1953
Riggs, Frank W., Montgomery (2)	*1950 to 1957
Riser, William H., Lafayette (5)	†1949 to 1955
Roan, Avery M., Decatur (8)	*1948 to 1955
Robinson, E. Bryce, Birmingham (9)	1948 to 1955
Salter, Paul P., Eufaula (3)	1948 to 1955
Salter, Wilbur M., Anniston (4)	†1948 to 1954
Samford, Millard W., Opelika (3)	1946 to 1953
Segrest, Grady O., Mobile (1)	*1949 to 1956
Sewell, John Ferris, Wetumpka (4)	*1947 to 1954
Sherrill, John D., Birmingham (9)	*1946 to 1953
Simpson, Harry M., Florence (8)	*1945 to 1952
Simpson, John W., Birmingham (9)	*1949 to 1956
Skinner, Marcus, Selma (4)	*1946 to 1953
Smith, Gordon R., Ozark (3)	†1948 to 1954
Stabler, Lorenzo V., Greenville (2)	†1951 to 1957
Stallworth, William A., Frisco City (1)	†1951 to 1957
Thacker, Vincent J., Dothan (3)	†1949 to 1955
Underwood, S. Sellers, Birmingham (9)	1949 to 1956
Waters, Hinton W., Opp (2)	*1946 to 1953
Watson, Jerre, Anniston (4)	*1945 to 1952
Weldon, Joseph M., Mobile (1)	†1949 to 1955
Whiteside, Maurice S., Cullman (7)	*1948 to 1955
Wilkerson, Arthur F., Marion (6)	1950 to 1957
Wilson, Frank C., Birmingham (9)	*1949 to 1956
Woodruff, Gerald G., Anniston (4)	*1947 to 1954
Total 98	

COUNSELLORS-ELECT

Hollis, Murray C., Winfield (7)	1951 to 1958
Holloway, H. Sellers, Notasulga (3)	1951 to 1958

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1951, there were 1785 members in the County Medical Societies. That would give one Counsellor to every 18 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

Names of Counsellors—W. T. Cocke, Marengo; W. J. Barber, Choctaw; R. D. Neal, Clarke; J. H. Baumhauer, G. O. Segrest, J. M. Weldon, J. D. Perdue and J. Mac Bell, Mobile; W. A. Stallworth, Monroe; J. Paul Jones, Wilcox.

County	Members	Counsellors
Choctaw	7	1
Clarke	10	1
Marengo	12	1
Mobile	177	5
Monroe	9	1
Washington	1	0
Wilcox	8	1
	224	10

SECOND DISTRICT

Names of Counsellors—C. G. Godard, Baldwin; L. V. Stabler, Butler; W. R. Carter, Conecuh; L. D. Parker and H. W. Waters, Covington; J. O. Lisenby, Escambia; E. F. Leatherwood, Lowndes; J. L. Branch, F. W. Riggs, J. A. Martin, J. M. Barnes, Robert Parker and D. G. Gill, Montgomery; and N. W. Killingsworth, Pike.

County	Members	Counsellors
Baldwin	19	1
Butler	10	1
Conecuh	10	1
Covington	23	2
Crenshaw	9	0
Escambia	14	1
Lowndes	3	1
Montgomery	122	6
Pike	17	1
	227	14

THIRD DISTRICT

Names of Counsellors—P. P. Salter, Barbour; E. L. Gibson, Coffee; G. R. Smith, Dale; E. T. Brunson, Geneva; C. T. Jones, Henry; V. J. Thacker and Arthur Mazyck, Houston; F. H. Boyd and M. W. Samford, Lee; H. S. Holloway, Macon.

County	Members	Counsellors
Barbour	11	1
Bullock	4	0
Coffee	12	1
Dale	8	1
Geneva	12	1
Henry	7	1
Houston	29	2
Lee	20	2
Macon	8	1
Russell	6	0
	117	10

FOURTH DISTRICT

Names of Counsellors—W. M. Salter, Jerre Watson and G. G. Woodruff, Calhoun; J. F. Allison, W. F. Harper and Marcus Skinner, Dallas; J. F. Sewell, Elmore; and French Craddock and C. W. C. Moore, Talladega.

County	Members	Counsellors
Autauga	6	0
Calhoun	40	3
Clay	6	0
Coosa	3	0
Dallas	38	3
Elmore	12	1
St. Clair	9	0
Talladega	27	2
	141	9

FIFTH DISTRICT

Names of Counsellors—W. H. Riser, Chambers; A. C. Gipson, J. O. Finney and J. O. Morgan, Etowah; A. L. Isbell and J. M. Crawford, Marshall; C. E. Ford, Randolph; and R. A. Foshee, Tallapoosa.

County	Members	Counsellors
Chambers	12	1
Cherokee	3	0
Cleburne	4	0
DeKalb	15	0
Etowah	68	3
Marshall	23	2
Randolph	8	1
Tallapoosa	15	1
	148	8

SIXTH DISTRICT

Names of Counsellors—W. J. B. Owings, Bibb; W. C. Golden, Chilton; T. J. Anderson, Hale; M. H. Eskew and A. F. Wilkerson, Perry; C. T. Ackler, Shelby; R. C. Hill, Sumter; and J. P. Collier, R. C. Partlow and C. E. Abbott, Tuscaloosa.

County	Members	Counsellors
Bibb	10	1
Chilton	12	1
Greene	5	0
Hale	6	1
Perry	9	2
Shelby	16	1
Sumter	16	1
Tuscaloosa	60	3
	134	10

SEVENTH DISTRICT

Names of Counsellors—E. T. Brown, Blount; R. B. Dodson, J. G. Daves and M. S. Whiteside, Cullman; B. W. McNease, Fayette; W. A. Gresham, Franklin; M. C. Hollis, Marion; L. C. Davis, Pickens; A. C. Jackson and J. C. Gladney, Walker; and R. Lee Hill, Winston.

County	Members	Counsellors
Blount	12	1
Cullman	22	3
Fayette	9	1
Franklin	14	1
Lamar	10	0
Marion	11	1
Pickens	8	1
Walker	31	2
Winston	11	1
	128	11

EIGHTH DISTRICT

Names of Counsellors—Rayford Hodges, Jackson; H. M. Simpson, Lauderdale; H. A. Darby and J. O. Belue, Limestone; W. G. McCown and C. A. Grote, Madison; and E. M. Chenault, J. C. Bragg and A. M. Roan, Morgan.

County	Members	Counsellors
Colbert	24	0
Jackson	14	1
Lauderdale	30	1
Lawrence	9	0
Limestone	12	2
Madison	39	2
Morgan	33	3
	161	9

NINTH DISTRICT

Names of Counsellors—J. D. Sherrill, J. R. Garber, R. E. Cloud, C. N. Carraway, H. Earle Conwell, J. W. Simpson, F. C. Wilson, G. A. Denison, Hughes Kennedy, Jr., J. A. Meadows, Ralph Morgan, D. C. Donald, Joe M. Donald, E. G. Givhan, Jr., H. W. Allgood, W. A. Clyde, E. Bryce Robinson, W. S. Littlejohn, and S. S. Underwood.

County	Members	Counsellors
Jefferson	507	19

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

Name and Address	Date of Election
Andrew J. Coley, Oklahoma City	1909
Rudolph Matas, New Orleans	1921
Henry A. Christian, Boston	1921
H. A. Royster, Raleigh, N. C.	1926
G. Canby Robinson, Baltimore	1928
Russell L. Cecil, New York	1934
Frank H. Lahey, Boston	1937
T. M. McMillan, Philadelphia	1938
George T. Pack, New York	1939
E. V. McCollum, Baltimore	1940
Harvey B. Stone, Baltimore	1942
Albert C. Furstenberg, Ann Arbor	1943
Tinsley R. Harrison, Birmingham	1944
Alton Ochsner, New Orleans	1946
Reginald Fitz, Boston	1947
Andrew C. Ivy, Chicago	1948
Max Thorek, Chicago	1949
Paul D. White, Boston	1950
Emil Novak, Baltimore	1951

SCHEDULE OF THE ANNUAL SESSIONS
AND PRESIDENTS SINCE THE RE-
ORGANIZATION IN 1868

<i>Place and President</i>	<i>Year</i>
Selma—Albert Galatin Mabry	1868
Mobile—Albert Galatin Mabry	1869
Montgomery—Richard Frazer Michel	1870
Mobile—Francis Armstrong Ross	1871
Huntsville—Thomas Childress Osborne	1872
Tuscaloosa—George Ernest Kumpe	1873
Selma—George Augustus Ketchum	1874
Montgomery—Job Sobieski Weatherly	1875
Mobile—John Jefferson Dement	1876
Birmingham—Edward Davies McDaniel	1877
Eufaula—Peter Bryce	1878
Selma—Robert Dickens Webb	1879
Huntsville—Edmond Pendleton Gaines	1880
Montgomery—William Henry Anderson	1881
Mobile—John Brown Gaston	1882
Birmingham—Clifford Daniel Parke	1883
Selma—Mortimer Harvey Jordan	1884
Greenville—Benjamin Hogan Riggs	1885
Anniston—Francis Marion Peterson	1886
Tuscaloosa—Samuel Dibble Seelye	1887
Montgomery—Edward Henry Sholl	1888
Mobile—Milton Columbus Baldrige	1889
Birmingham—Charles Higgs Franklin	1890
Huntsville—William Henry Sanders	1891
Montgomery—Benjamin James Baldwin	1892
Selma—James Thomas Searcy	1893
Birmingham—Thaddeus Lindley Robertson	1894
Mobile—Richard Matthew Fletcher	1895
Montgomery—William Henry Johnston	1896
Selma—Barckley, Wallace Toole	1897
Birmingham—Luther Leonidas Hill	1898
Mobile—Henry Altamont Moody	1899
Montgomery—John Clarke LeGrande	1900
Selma—Russell McWhorter Cunningham	1901
Birmingham—Edwin Lesley Marechal	1902
Talladega—Glenn Andrews	1903
Mobile—Matthew Bunyan Cameron	1904
Montgomery—Capers Capehart Jones	1905
Birmingham—Eugene DuBose Bondurant	1906
Mobile—George Tighlman McWhorter	1907
Montgomery—Samuel Wallace Welch	1908
Birmingham—Benjamin Leon Wyman	1909
Mobile—Wooten Moore Wilkerson	1910
Montgomery—Wyatt Heflin Blake	1911
Birmingham—Lewis Coleman Morris	1912
Mobile—Harry Tutwiler Inge	1913
Montgomery—Robert S. Hill	1914
Birmingham—Benjamin Britt Simms	1915
Mobile—James Norment Baker	1916
Montgomery—Henry Green	1917
Birmingham—William Dempsey Partlow	1918
Mobile—Isaac LaFayette Watkins	1919
Anniston—James Somerville McLester	1920
Montgomery—Louis William Johnston	1921
Birmingham—Dyer F. Talley	1922
Mobile—Walter S. Britt	1923
Montgomery—W. W. Harper	1924
Birmingham—J. D. Heacock	1925
Mobile—C. A. Mohr	1926
Montgomery—A. L. Harlan	1927
Birmingham—John D. S. Davis	1928
Mobile—E. V. Caldwell	1929

<i>Place and President</i>	<i>Year</i>
Montgomery—L. E. Broughton	1930
Birmingham—W. G. Harrison	1931
Mobile—Toulmin Gaines	1932
Montgomery—Samuel Kirkpatrick	1933
Birmingham—James R. Garber	1934
Mobile—William M. Cunningham	1935
Montgomery—Charles A. Thigpen	1936
Birmingham—Lloyd Noland	1937
Mobile—E. S. Sledge	1938
Montgomery—Seale Harris, Sr.	1939
Birmingham—M. S. Davie	1940
Mobile—Samuel A. Gordon	1941
Montgomery—James M. Mason	1942
Birmingham—Harvey B. Searcy	1943
Montgomery—Fred W. Wilkerson	1944
Meeting Cancelled—Walter F. Scott	1945
Birmingham—Walter F. Scott	1946
Birmingham—Carl A. Grote	1947
Mobile—Jesse P. Chapman	1948
Montgomery—J. Paul Jones	1949
Birmingham—Frank C. Wilson	1950
Mobile—Joseph M. Weldon	1951

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1852-1854	George A. Ketchum
1854-1855	R. Miller
1869-1873	Jerome Cochran
1874-1878	B. H. Riggs
1879-1892	T. A. Means
1893-1897	J. R. Jordan
1897-1904	G. P. Waller
1904-1906	L. C. Morris
1906-1915	J. N. Baker
1915-1923	H. G. Perry
1923-1924	Douglas L. Cannon
1924-1930	B. B. Simms
1930-1940	Douglas L. Cannon

TREASURERS OF THE ASSOCIATION

1854-1855	W. P. Reese
1869-1898	W. C. Jackson
1898-1915	H. G. Perry
1915-1939	J. U. Ray

SECRETARY-TREASURERS OF THE
ASSOCIATION

1940-	Douglas L. Cannon
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SCHEDULE OF JEROME COCHRAN
LECTURERS

1899—J. T. Searcy, Tuscaloosa—What Is Insanity?
1900—Wm. Osler, Baltimore—Not present.
1901—Wm. Osler, Baltimore—Not present.
1902—Nathan Bozeman, New York—Declined.
1903—George H. Price, Nashville—The History of Medicine.
1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.

1905—Robert Abbe, New York—The Problems of Surgery.

1906—Joseph Collins, New York—Arteriosclerosis.

1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.

1908—E. L. Marechal, Mobile—Absent.

1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.

1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.

1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.

1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.

1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.

1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.

1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.

1916—Howard A. Kelly, Baltimore—Radium Therapy.

1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.

1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.

1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.

1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.

1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.

1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.

1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.

1924—James S. Stone, Boston—Abdominal Diagnoses in Children.

1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.

1926—Stewart Roberts, Atlanta—The Heart Muscle.

1927—G. Canby Robinson, Baltimore—The Mechanism of Heart Failure and Its Correction.

1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.

1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.

1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.

1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.

1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.

1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.

1935—George H. Semken, New York—A Consideration of Tumors of the Breast.

1936—William D. Partlow, Tuscaloosa—A Debt the World Owes Medical Science.

1937—Frank H. Lahey, Boston—Carcinoma of the Colon and Rectum.

1938—T. M. McMillan, Philadelphia—An Optimistic View of Some of the Problems of Heart Disease.

1939—George T. Pack, New York—Recent Advances in the Radiation Therapy of Cancer.

1940—E. V. McCollum, Baltimore—Some Contributions of Nutritional Research to Clinical Medicine.

1941—M. Y. Dabney, Birmingham—The Story of Breast Cancer.

1942—Harvey B. Stone, Baltimore—Biliary Diseases as Seen by a Surgeon.

1943—A. C. Furstenberg, Ann Arbor—Objectives in Medical Education.

1944—Tinsley R. Harrison, Dallas, Texas—The Value and Limitations of Laboratory Tests in the Practice of Medicine.

1945—Meeting Cancelled.

1946—Alton Ochsner, New Orleans—The Influence of Serendipity on Medicine.

1947—Reginald Fitz, Boston—The Early Characteristics of Certain Chronic Diseases.

1948—Andrew C. Ivy, Chicago—The Gallbladder in Health and Disease.

1949—Max Thorek, Chicago—Cholecystectomy: Its Technical Variations.

1950—Paul D. White, Boston—Historical Delays in the Application of Knowledge About the Heart.

1951—Emil Novak, Baltimore—The Relation of Hormones to Female Genital Tumors.

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(Term: January 1, 1951-December 31, 1952)	
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(Term: January 1, 1952-December 31, 1953)	

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Francis M. Thigpen, Montgomery	1956
J. O. Finney, Gadsden	1956
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Douglas L. Cannon, Montgomery	<i>ex officio</i>
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APRIL 19-21, 1951

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 Clay: J. E. Foster, Lineville
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 Tallapoosa: J. R. Chapman, East Tallassee; G. B. Richardson, Alexander City
 Tuscaloosa: R. M. Clements, Tuscaloosa; O. L. Jordan, Tuscaloosa
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 Brown, N. L., Mobile
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Cowles, A. D., Ramer

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England, F. T., Mobile
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Fisher, C. J., Birmingham
Fisher, G. E., Birmingham
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Flowers, P. R., Dothan
Fonde, W. G., Mobile
Fowler, Inez, Mobile
Frazer, E. B., Mobile

Fudge, Walter, Lamison
Freeman, A. M., Jr., Birmingham

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Gilchrist, P. P., Mobile
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Gwin, P. E., Sumiton
Gwynn, H. B., Mobile

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Harris, R. O., Mobile
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Henderson, A. D., Mobile
Henderson, E. A., Opelika
Hill, V. H., Mobile
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Holley, H. L., Birmingham
Hope, J. C., Jr., Mobile
Hopkins, P. I., Dothan
Hudson, H. C., Birmingham
Hudson, V. T., Mobile
Huey, T. F., Anniston
Hughes, B. A., Birmingham
Hughes, J. W., Decatur
Humphries, J. M., Birmingham
Hutchinson, H. H., Montgomery
Hyman, Jack, Mobile

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Inge, J. T., Mobile
Irwin, W. H., Leeds

J

Jarvis, J. R., Birmingham
Johnson, G. T., Mobile
Jones, W. N., Birmingham
Jordan, H. C., Fairhope
Jordan, J. S., McKenzie

K

Kahn, S. A., Birmingham
Kaiser, E. N., Montgomery
Kay, F. A., Birmingham
Kimbrough, B. B., Prichard
Kimbrough, R. M., Birmingham
Kimmey, J. M., Elba
Klapper, Margaret S., Birmingham

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Lary, J. H., Huntsville

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Linder, Hugh M. C., Birmingham
Lineberry, E. D., Birmingham
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Littlepage, G. F., Sheffield
Long, R. N., Selma
Lyons, Champ, Birmingham

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Marshall, W. L., Langdale
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Moorer, M. L., Mobile
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Mosher, D. M., Flomaton
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Mulherin, H. G., Mobile
Murphy, S. S., Jr., Mobile

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Norman, E. T., Greensboro
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Tucker, W. H., Mobile
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SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1920	16	61	59	85	51	272	Anniston
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile
1933	21	74	103	264	85	547	Montgomery
1934	26	75	97	404	53	655	Birmingham
1935	15	59	91	180	83	428	Mobile

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1936	23	79	95	265	68	530	Montgomery
1937	25	80	96	396	81	678	Birmingham
1938	18	65	78	157	63	381	Mobile
1939	29	79	96	326	84	614	Montgomery
1940	29	77	105	401	229	841	Birmingham
1941	29	66	86	211	91	483	Mobile
1942	33	75	105	249	82	544	Montgomery
1943	31	71	83	321	127	633	Birmingham
1944	33	72	92	214	110	521	Montgomery
1945	Meeting Cancelled						
1946	38	81	87	330	127	663	Birmingham
1947	34	76	91	333	124	658	Birmingham
1948	24	64	87	239	127	541	Mobile
1949	31	84	93	288	106	602	Montgomery
1950	26	85	91	391	118	711	Birmingham
1951	21	75	84	281	115	576	Mobile

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AMERICAN MEDICAL ASSOCIATION NEWS

DRUG GIVEN BY MOUTH RELIEVES PAIN IN SOME CANCER PATIENTS

A chemical compound which can be given by mouth is reported by seven New York doctors to be useful in bringing temporary relief to patients suffering from fatal cancer-like diseases of the white blood cells and tissues.

The oral use of triethylene melamine on 58 patients is described by Drs. David A. Karnofsky, J. H. Burchenal, George C. Armistead, Jr., Chester M. Southam, J. L. Bernstein, L. F. Craver, and Cornelius P. Rhoads in the April Archives of Internal Medicine, published by the American Medical Association. The doctors are all associated with the Memorial Center for Cancer and Allied Diseases, New York.

Triethylene melamine is a valuable addition to the small group of drugs now known to be effective in relieving pain in these types of disease, according to the doctors. This is due primarily to the fact that it can be given by mouth, releasing the patient from his dependence on a doctor for administration of the drug. All the other drugs, they point out, have to be injected intravenously, which almost always makes hospitalization necessary.

Clinical trials with the drug are now being widened to include a greater variety of tumorous conditions, they said.

REVERSIBLE BIFOCALS NEWEST DEVELOPMENT IN EYE GLASSES

A new type of eye glasses which allows the bifocal portion to be moved out of the

way when not needed is described by Dr. David E. Rolf of Cleveland in the April Archives of Ophthalmology, published by the American Medical Association.

According to Dr. Rolf, the lenses of the glasses may be rotated, or turned upside down, by a unique method of attachment, so that the bifocal part is on top instead of on the bottom. In his opinion this reversible lens arrangement has certain advantages. He said:

"Its flexibility will save many patients an extra pair of glasses. It offers a possible solution to the long-standing problem of the patient who cannot accustom himself to walking while wearing bifocals in their usual position. It also permits the bifocal segment to be placed upward and out of the way during all or part of his walking activities. It would also seem applicable for patients engaged in occupations with unusual visual demands. Patients in these categories include barbers, switchboard operators, painters and paper hangers, as well as most people employed in the building trades, where sure footing is a necessity."

Dr. Rolf believes that the mechanics of changing the position of the lenses are sufficiently simple so that most persons are able to master them easily. He said there are no limitations regarding size, shape or type of bifocals or trifocals that can be used and the technic of prescribing and fitting these lenses is not difficult.

URGE DOCTORS TO AID P. T. A. IN ROUND-UP OF NEW SCHOOL PUPILS

The Journal of the American Medical Association has called upon doctors to provide the usual cooperation of the medical profession in the Summer Round-Up of Children, sponsored by the National Congress of Parents and Teachers.

In the roundup, physicians will be asked to examine the annual increment of kindergarten and first grade children. The program has had the endorsement of the A. M. A. since its inception in 1925. Present policies and standards have been developed through the assistance of the director of the association's Bureau of Health Education.

"The health appraisal should be something less than a pediatric examination, but something more than a hurried inspection of the tonsils and a pat on the head," said the

Journal. "It is, first, an educational experience for the child and parent and, second, an evaluation of the child's development and fitness to undergo the intellectual, emotional and social changes incident to starting school."

The editorial stressed that starting to school is a critical time for a child—"his first great venture away from home, a division of allegiance and an exposure to a strange new world." It continued:

"Though the Summer Round-Up program was started by the Congress of Parents and Teachers to detect defects and lead to their correction, modern thinking in relation to the school health program suggests that the development of an easy, friendly relation between the child and his physician is an equally valuable outcome. Every child who learns early the physician's place in his life and has been taught in his contacts with his physician that this doctor, any doctor, is his friend will continue through the years to have an attitude toward the profession that will help to solve many of the social problems which now trouble us both individually and collectively."

EPILEPSY NEED NOT BE HANDICAP, SAYS NERVE DOCTOR

Epilepsy in most instances should not interfere with the normal activity of individuals suffering from that condition, in the opinion of Dr. Lewis J. Pollock of Chicago, a nerve specialist.

In most cases the attacks are controllable, Dr. Pollock emphasized, writing in the May issue of *Today's Health*, published by the American Medical Association. He summed up "What is epilepsy?" in this way:

"It is not related to feeble-mindedness; it is not, nor does it lead to insanity; it is not associated with, nor does it lead to delinquency, vice, crime or mental deterioration. In most instances, it should not interfere with good health, education, technical or professional training, or commercial, manufacturing or professional pursuits. It is compatible with courtship, marriage, bearing and rearing children, the pursuit of happiness and normal social life and good citizenship. It bears no shame. It deserves only that amount of compassion freely given to those who have some other illness."

Epilepsy, meaning to be seized, he said, may be the result of injury or disease of the brain or of certain bodily disease. In many cases, however, the cause is not known, he said.

Dr. Pollock described two main types of seizures. Grand mal or big attack, he said, is easily identified as a fit by any layman. Petit mal or little attack was described as a momentary lapse of consciousness, a short black-out or only a peculiar feeling. Often the person automatically continues what he has been doing, or he stops speaking temporarily, and may stare or smack his lips, he said. Repeated periods of excitement, rage or confusion, sleep-like states, or sudden twitching of the shoulders, as if startled, may constitute an attack.

"It is especially necessary," he continued, "to recognize recurrent attacks in infancy and young childhood, which may indicate the beginning of the disorder or call attention to the possibility of its later development."

Although infantile convulsions, such as occur with fever, upset stomach or cutting of teeth, are not forerunners of later epilepsy, he said, repeated convulsions are evidence of an increased chance of late epilepsy.

"Convulsions occurring on one side of the body after the fourth year and generalized convulsions lasting one and a half hours and followed by several hours of confusion or sluggishness are especially significant for the later development of epilepsy. Head-banging and breath-holding to the point of blueness of the skin and loss of consciousness should be reported to a physician as soon as they are observed. Repeated dizzy attacks of a very short duration and screaming followed by limpness likewise have a serious import."

Dr. Pollock feels that a child with a convulsive disorder should be informed about it just as soon as he is able to reason well, to understand and to adjust to difficult situations.

"Such frankness helps prepare a patient for education and social adjustment and if he has been unaware of the attacks, as many children are, it adds to the success of treatment which he may have thought unnecessary," he added.

He pointed out that there is no miracle drug or surgical procedure that can cure epilepsy at present, but that the attacks can be controlled in at least 70 per cent of all cases not due to organic disease.

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Volume 20

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